

"I'll wait forthe Mac Wia 95, via ms, creator of the

soft] users real-ize what they're really getting me what

they've been promised we'll be there for them with OS/2 Warp.

-Lee Reiswig, go Personal Softwan



"Everything that can be Win 85 has been said The Win 95 uper interface is not nearly as good as the

- Larry Ellisen, CEO, Oracle Corp.



a software n lease is an his torical event is indicative of the fact the some of these get real times

To think that



The Newspaper of Information Systems Management August 28, 1995. Val. 29, No. 35, 176 Pages, \$6/Copy, \$48/Year

Win 95 off and runni The party's over: When will the migration begin?

By Stuart J. Johnston Pinally:

The wait for Windows 95 to ship is over. although the hype hasn't shated a hit. Microsoft Corp. Chairman Bill Gates was joined on stage by comedian Jay Leno last Thursday inside a gigantic tent on the company's Redmond, Wash. campus

The gula launch celebrated the commercial availability of the 32-bit operating system, which effectively does away with MS-DOS and finally gives Windows features comparable to the Magintoch Retail sales of Windows 95 began at

midnight last Wednesday, with many computer stores staying open late to accommodate potential buyers. Some even held events of their own to build on the fronzy surrounding the system

Gates said Microsoft has commitments for more than 300,000 Windows 95 units from a laundry list of corporations On the list are ATAT Global Informs. tion Solutions, Columbia/HCA Healthcare Corp., Deloitte & Touche, The Dow Chemical Co., Ford Motor Co., NASA's Johnson Space Flight Center, Owens-

Corning Fiberglas Corp., Saturn Corp., Stemens, Inc. and Union Carbide Corp. Migration, page 123

Microsoft zips lips of help desk partners about calls Off peak

esident of Window

es suggest.

By John King and Tim Our Bette

the Windows 95 operating

Microsoft imposed who

Aug. 23 and 9 a.m. Aug. Corp. 8837 24. Microsoft said t "Jump!" and its Inunch received 2, coo calls for partners ask, "How high?" help from Windows or That much was obvious users. That number is last week about the relationmuch lewer than ship between the software Microsoft expects to giant and the vendor parthandle at peak times, ners looking to make his said Deborah backs from the release of Willingham, vice

amounted to a gag order on third-party support provid-ers, further tightening its ween midnight or grip on the Windows 95 mar And the company's long

arm of control also kept a headlock on some computer retailers across the country At a Computer City store in Framingham, Mass., emplorees were specifi told to keep quiet about Win

dows 85 sales figures, ac cording to salespeople and soft, page 16

Cabletron gets versatile More LAN switching for less specific integrated circuit, or ASIC, which

By Boh Wallace Cabletron Systems, Inc. will soon announce Ethernet and Fiber Distributed Data Interface switching modules that analysis said will give users the industry's most versatile LAN switch-

ingsystem. According to Cabietron documents obtained last week by Computerworld, the company will formally announce the products before the Networld/Interop '85 conference next month. It will ship them by year's end, company officials

The devices are based on the internetworking giant's new Past Packet Switch application-#UIV7ZE300M099039#

UNIVERSITY MICROFILMS INT

dramatically boosts performance of the MMAC and MMAC-Plus switching habe

in addition to giving users that performance boost, the Cabletron switches will supp much more LAN switching at lower costs. The new, higher-performance LAN switching modules will cost roughly the same as the older models, a strategy that is a bir hit with Cable-

Price down, performance up The ASIC technology is driving the price of interfaces down, which means the cost per port of Ethernet switching is dropping," said Peter Pollnck, vice president of new technology and

architecture at the information services arm of cable movie channel Showtime in New SBXBBJFT28888888888 5-DIGIT 48103 York "That's great 0010111550 news when coupled nn16 with the serious boost

in switch perfor-The weader also plans to use the ASIC Cabletron, page 16

Will Win 95 kill OS/2?





More on Windows 95 inside The coast-to-coast launch hit lever pitch last week, page 12 dy's a comedian! A humor sampling from the 'net and

een there, done that" - the rallying cry of Nac users, page 14 indows 95 migration poses backup hazards, page 24 • Users lay the hard ers lay the hardware groundwork for upgrading (page 49) or reviewer scopes out installation ups and downs, name as

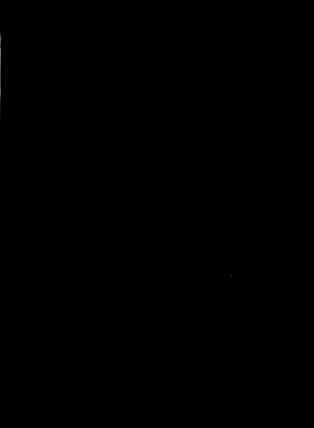
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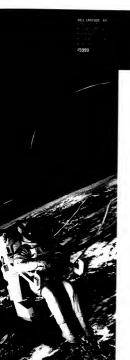
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1

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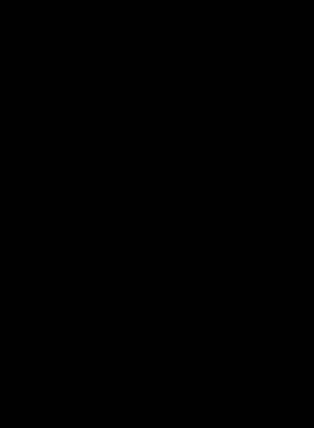
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News

Mainframe price war? IBM's new air cooled main frames will see some competibon next week when Amdahi begins marketing a rival famely

A Routing software New software centrally man ages diverse routers, switches and carner services that also build complex WANs.

Handheld computers New PDAs are arriving this fall - and they may even be useful

PC price tag twist PC prices may be in a free fall right now, but users are actu spending more money on hard ware than ever before.

Client/server mainframes IBM plans later this year to start making the mainframe a more complete participant in cli the Distributed Computing Enviroament

Win os humor

"A good software product is kind of like a good date smart, friendly ... and under \$100," comedian lay Leno quipped. That and other Win dows 95 tokes were making the

Apple's response Apple struggles to be heard

A new kind of ATM MES Datanet is the first comny to offer users voice and data

over variable bit rate ATM. Air traffic control American Airlines with compact

Cisco enhancements Cisco details new features for its router software in the areas of security and policy-based

routing OPINION

CD-ROM backlash that data on glitzy CD-ROMs is no more accurate than that in old-fashioned books.

Windows 95
Max D. Hopper says Windows 95 won't win top honors in the IT half of fame.

Rich Tennant's "The 5th Wave" is on vacation and will be moving to another location In Computerworld, We'll keep you posted.



Choice Cuts

Client/server financial software is moving the earth: Analysts say the market will soar to \$3.7 billion in 1999. But there are

some settlina cracks to contend with. CW Guide, page 88.





The dual faces of Internet security: Steve Moore argues that Big Brother is lurking on the 'net, while Gary H. Anthes contends that all is secure. Enterprise Networking, page 59.

> APPLICATION DEVELOPMENT

Diects for Win os

Internet development

Object-oriented tool make

Web development tools.

New object priested days

Next Computer unveils place for

Technical Sections

DESKTOP COMPUTING 33 Hardware upgrades

Some users are lawner the hand ware groundwork to upgrade to

WORKGROUP COMPLITING 31 PC management The Desktop Management In terface standard is extended to

include remote computers. Faxing woes Despite the hope about certine to users

bound routing for faxes remains a far from-pe quires too much user participa

ENTERPRISE NETWORKING

oses in on taking over de velopment and support for a NetWare-to-host gateway, No

The internet Page ternet services. but details re

main sketchy LARGE SYSTEMS Client/server migration

IBM is developing bridges be-tween its MQSeries messaging based transaction processing

Data General unveils a high-end server based on an emerging ar-chitecture that allows the boxes to scale up to 32 phocessors

ment tools take advantage of Windows or **Features**

Avoiding layoffs Europe and Japa are finding novel approaches to avoiding mass layoffs but no surefire cure

Opting out, cashing in the majority of independent IS contractors make more than \$65 perhour, according to a recent survey. So how can you cash in on this growing field?

MARKETPLACE Financial software

Getting 100% of financial pro-cessing onto a client/server sys tem is at least two years away for most companies. Mean-while, companies must decide tween stand-alone, best-of breed products and an integrat-

Etc.	
Calendar	
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How to contact CW	

Coming next week: The 9th annual Computerworld Salary Survey



IS salaries have increased an average of 4.5%, while other professions average 3%. That's good news, but women are still vastly outnumbered in upper management jobs.

120

Amdahl to heat up air-cooled market

Competition for IBM should lower costs, but shipments won't start until mid-1996

1996's new generation of air-cooled mainframes will start losing their lone wolf status next week when Amdahl Corp. begins marketing a rival family. The promise of some boncompetition should mean further price relief for System/380 shops, although Amdahi's ma chines won't ship antil mid-1986.

For now, customers can inrn to only IBM to get the latest - and cheapest - mainframe technology based on low-cost CMOS micropro-



cessors. While IBM's sir-enoied 9672 R models self for less than traditional ES/9000s, the lack of air-cooled alternatives has enabled the company to hold the line on pricing for the past year

If I want to bring in CMOS today, I only have one option, and IBM is making a buge profit margin," said Dule Perry, director of technology architectures at Bell Sygma, Inc. in Toronto. Perry and other mainframe buyers said they expect Amonhi's systems to force IBM out of its pricing shell. Hitachi Data Systems Corp. is

also planning to ship a line of air-cooled machines next year, a sing BM's CMOS technology under a breasing deal signed last year by par

Analysts predicted that the presence of Am-

dahl and HDS could belp push air-cooled pricing down by a third or more from its current perch of up to \$18,000 per MIPS (see chart).

Amdahl is telling customers it expects to ermance edge over both IBM and HDS, "and that may be the key to success for them," Perry said. Bell Sygma has a mix of mainframes from all three vendors and will ool definitely" look at each of the air-rook-d

surces briefed by the company said it will nise performance of 45 to 48 MIPS for its CMOS-based processors, which are being developed by parent company Fujitsu, Inc. Rob Schaler, an analyst at Meta Group, Inc. in State

MIPS with the third version of the 9672 R, which it also due to mid-1996 Amdahl will support up to eight processors in a single box, two fewer than BiM can squeeze into a 9672 R, Schufer said. While that puts Amdahl at an overall performance disadvantage it will mitigate the impact by supporting IEM's technology for coupling multiple System/390s together into so-called "sysplex" clusters that

However, one disadvantage that may be barder

to evercome is IBM's ability to offer discounted package deals combining the 9672 R hardware with MVS and its other manuframe nothware While IBM has always been able to offer such seconds on the side. It excelled over 9679 ft packages that are used for most purchases of the machines, said Charlie Burns, an analyst at Gartner Group, Inc. in Stamford, Conn Since Amdahl and HDS lack their own software prod-

ucts, beating IBM on pricing "is not going to be an easy deal for them," Burns said Wayne Pattison, director of data center operstions at Kansas City Southern Railway Co. in Missouri, said be expects to stick with IBM as his supplier for the air-cooled machines But the arrival of Amdahi and HDS will crell

be good news, Pattison added "They'll drave the price down, and IRM will have to come down with them. I'll be glad to take advantage of it."

Cisco lifts curtain on high-end routers further by supporting multiple interfaces on

Cisco Systems, Inc. last week formally an need the details - architecture, pricing and availability - for its three-model, nextgeneration 7500 high-end routers. Ciseo will offer the 7505, 7507 and 7513 mod-

els, which have five, arren and 13 slots records tively. The new 7500 units use the vendor's in-termetworking Operating Software, which orts all major protocols [CW, Aug. 21].

The 7500s integrate routing and switch: a single processor, which frees up slots for interfaces. The company said the new Versatila ace Processor (VIP) takes that one step

Base pricing for the 7505, 7507 and 7513 starts at \$10,500, \$19,900 and \$29,900 respec-All models are available now. Software op-

tions cost \$4,000 to \$8,000. Cisco offers a VIP that supports four Ethernet links and one 100Base-T "fast" Ethernet link for \$17,000; a model that supports two "fast" Ethernet links for \$16,000; a unit that orts one "fast" Ethernet link for \$12,000. and a VIP with four Ethernet and four serial links for \$17,000. All will ship in the fourth

ATM light goes on at Bay: Hub, router first targets By Bob Wallace

Bay Networks, Inc. next month will detail long-excuted warrs and en-

hancements to its product line that will let users gradually micrate to backbone networks based on Asynchronous Transfer Mod (ATM). Computerworld bas

Bay plans to shore up its System 5000 evalching bub with an ATM interface

in the first detailed technology direction blueprint since the company was formed from the merger of

Wellfleet Communica tupps, Inc. and SynOr ties Communications inc tast year Bay sources, who

requested anonymity said the upcoming an oouncements signs how the System 5000 will be positioned as a full-blown "virtual

network backhone routing switch" by 1997 ABay spokesman confirm plans for the strategy announcement but would not comment fur-

The Sentember announcement will include other improvements that will enable the System 5000 to at chor an ATM-based LAN switching back boor and support LAN protocols ATM networks

Users said then ansouncements will come not a moment Twe been leoking at the System 5000 for oute a while now and have been wasting for

their great ATM plan since the merged con peay was launched sand Bill Horst, a chief at the Gen eral Services Admin communications branch in Phita delphia. Two wanted to see which of the items that the ATM Forum is

working on that they planned to support in their produ The ATM Forum, a large indus try association, and Bay are both working on schemes for an ATM capability called Private Network to-Network Interface (PNNI), virtual LAN routing and Multiproto-

enlowers ATM (MIROA) Bay is separately prepping the ATM interface for the System 5000, and it is planning to later add ATM-based LAN switching to

ATM functionality will position the System 5000 as a strong com Systems, inc. and 3Com Corp., said ane source briefed by Bay on the

make Bay Networks a serious player in ATM [switching]." The enhancements to the System 5000 will include ATM-based

Bay Hetworks details ATM strategy The switch maker is prepping the following products and capabilities: M REPRESENTE FOR THE SPECTRA SCOOL

said.

Ethernet and Token Ring LAN switching, the latter coming from Bay's arquisition of Token Ring ewitching ploneer and start-up Contillion Networks, Inc., sources

> The System 5000 will also support what Bay calls Integrated Private Network-to-Network Interface (I-PNNI), a spin on a specification that the ATM Forum is developing. The Forom's specification would rousers and switches pass routing data across an ATM

internetwork But with I-PNNI Bay devices could have more espabilities over and above rified by the ATM Forum.

The Bay devices, for example, could select optimal paths through networks and offer quality-of-ser-Bay will also eventually build virtual LAN routing capabilities

into the System 5000, Virtual LANs are logical rather than physical networks. The System 5000 would be able to support multiple virtual LANs and route between them.

The vendor also plans support for MPOA, a means for running Nowell, Inc.'s IPX and IP between devices in ATM networks sources



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Firm adds spark to WAN manager

StonyBrook tool handles routers, switches, services

By Patrick Drydef

To help administrators maintain in creasingly complex wide-area networks.

router management specialist Stony Brook Software last week introduced re versatile software Called Router Manager/Auto

Bahn, the Windows-based WAN manager provides a single console for configuring and monitoring not only routers and bridges from diverse vendors but also in

Wide-area switches and connecting sernetworks

bilities make the tool a significant alternative to the many individunl proces needed to manage mul threndor WANs or complex and costly Unix-based management platforms, said Tim Wilson, a management analyst at Decisis inc., a consultancy to Herndon

'AutoBahn offers a halistic view of the backbone that you can't get from individual element managers," Wilson said. 'The live view lets you see the topology of all routers, switches and in-

twork links at once Typically, administrators rely on an enterprise network management platform to integrate the myriad tools from vendors via the Simple Network Management Protocol SconyBrook's option won't compete with much a core platform but will serve a niche pur-

pose as a WAN topology nager, Wilson said.

ta testers said Router nager/AntoBahn met their needs for managing the configuration, performance and faults of their large networks They specifically praised the Windows-based software for its simplicity

ickly and ensity on a PC and leveraged our Windows skills, so we could do more value-added management tasks than all nd and muck with the tools," said Rick Sangha, telecommunications manager at specialty steel producer Alleghe-

ny Ludlum Corp. in Pittsburgh Sangha said his former Unix-based management tool set required a considerable amount of time and money for initial training plus an exorbitant amount of administrative overhead. "We had to hire rocket scientists to make it all work said. "AutoBahn is easier to nor, so the old tools just sit in the corner Stony Brook's RouterManager appli

estions integrate well on a Windows plotform with other tools, such as the network mazagement services from Novell Inc. according to Clear Hower, systems programmer as Buck Consultants, Inc. a.

Window into WAN management STORYBROOK SOFTWAR'S

e: A single console that configures and COLOUR WAN et DES: Managers uplifs and software from Xorn, Bay Networks, Cisco, Durtal

ncis: Manages packet-awtching techno including X.2s, frame-relay and Switched Multi-megabit Data Service; Support coming for ISDN. 4 456 CPU, 20M-byte hard disk and SM bytes of

stys. Available nor PRICE: \$1,995 plus agents

pany. "Their software is easy to use, with no learning curve, and has the functionality of [Cisco Systems. Inc. router manager] CincoWorks, so it's cost-effective

Problem detection Bowen tested the AutoBahn version to be able to monitor the frame-retay connec-

tions among (8 of the company's 30 routed sites. Another valurtoBahn installed able feature is the ability to test and trace the path a parket takes from ree to destination, he

quickly and easily on a PC and leveraged our Windows skills, so we could do more value-added ent tasks than Bahn can belp manage packet-switching

vice (SMI)S) "Now WAN managers can prove to a carrie where a problem lies," said Ravi Guinti president of Stony Brook in Bohe man, N 3 Besides supporting the generic and private management extensions of both bardware and software routers, the

nologies including X25

frame-relay and Switched

Multimegabit Data Ser

package can manage Ethernet, Token Ring and Fiber Distributed Data Inter face switches and their router inter faces. Guintr sand RouterManager/AutoBahn can run o all Windows versions, but StonyBrook

recommends Microsoft Corp 's Windows Pricing starts at \$1,995 for the base

application plus agent modules.

'Superglue' approach to objects gains followers

IBM, Oracle, others sign up for Visual Edge software By Elizabeth Heichler ject once and deploy it over a beteroge

prous environment," Schwartz said "Object Bridge promises to belp as achieve that goal. We think that the ar-

fragmented world of distributed object chitectural foundation represents an important approach to object system trans-ISM, Orack Corp. and Talievet Inc. are among the companies that an Schwartz and other observers soid VI nounced inst week that they will license

sual Edge's technical approach is differest from, and superior to, that taken by some of the object system vendors that do offer some level of interoperability between their ORBs and COM.

This is one of the better

designed interoperability options," said Melinda Ballou, an analyst at Mets Group, Inc. in Stamford Conn. Other solutions, from individual ORB vandore don't affer the same level of flexibility she explained Bellon added that enoth

er advantage of the Visual Edge solution is that the company is a postral player in the object market and isn't trying to sell bridge technology in concert with a specific ORR product or obined model

Representatives of Oracle and IBM and they chose to license the Object Bridge technology because it is flexible and can be extend-

ed. This means it will permut information exchange not only among multiple object models but also among object avatems: and different data types, such as rein-

None of the comp ose how ti will incorporate Object Bridge into future products, nor when the technology will be available to cus-

Object-oriented development tools bow for Windows 95. See page 76.

Several of the obsect mod Don't fence me in els available are based or the Object Management Group's Common Object Re nmest Brokue Architecture Storeers Trust won't be specification, as well as Mi tocked in to utiling a crosoft Corp 's Component Object Model (COM) Alkeller slightly different ways of dehasn't found one than financhos obsects communimeets the following case with each other, which makes interoperability by

twose them difficult ransaction servi a.Ability to operate in a interest piqued Bankers Trest Co. in Nes York is evaluating the tech potory from Saint-Laurent Oprhor-based Visual Edge according to Joe Schwarze senior consultant in soft ware regionerous at the

A small company has created technology

that might serve as supergine for the

Visual Edge Software Ltd's Object

Bridge, which promises to permit inter

operability among all the disparate ob-

ject models on the market.

hank's Advanced Technol ogy Consulting group We're interested in distributed ob technology," Schwartz said. And the company also wants to have the flexibit by to deploy systems that use a mix of oh

rect models, he added

Because Bankers Trust uses Window on desktop systems, it preds to enable communication between COM on the client side and different object request bro kers (ORB) on the back end, Schwartz

Our key goal from an applications development perspective is to build an ob-

Corrections

"SAP AG runs late, but users give bird marks" [CW. July 31] indicated that SAP AG had slipped on its initial July delivery date for Release 3.0 of its P.7 software. SAP subsequently said in dad ship a limited number of R/3 aystems in July under its first coston shipment program. Release 3.0 will be available generally by the end of the year, as originally planned, the com-

Due to an editing error, a photo in beied TeamTelk that ran with "Prod-

July 31] should have rend FirstClass by SoftAre, Inc. in Markham, Outario. Due to a reporting error, "New York cases taxes to create multimedia meeen JCW, Aug. 14) incorrectly stat ed that N2K, inc sells an interactive CD-ROM-based jazz catalog called Jazz Central Station for record label GRP Rather, N2K is launching Jazz Central Station, an op-line multimedisconnection for the juxz community

on The Microsoft Network.

Putting data into a warehouse is one thing. Getting it back out, however, is a different story.

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PDAs: Better Notebook prices slipping down and cheaper?

Poor sales prompt vendors to respond to users' need for better connectivity

By Mindy Blodgett

The troubled personal digital assistant (PDA) market has proved disappointing even for those vendoes braced for the worst, but industry observers say several PDA manufacturers are pressing ahead with new and improved products due this fall.

The forthcoming PDAs are likely to be set at hundred dollars chesper, costing \$500 or less. More important, the next generation of PDAs will

more closely meet users need for connectivity, according to observers You should be seeing cheaper PDAs with many more features," said Time thy Schmidt, an analyst at

Encore Consulting Group In Orlando, Fln. "And you should be seeing more interesting softwa written to PDAs, for instance, providing such Sources said Hewlett-Packard Co. will re-

lease a PDA this fall based on the Geoworks Geos operating system. HP had hoped to releasen PDA continues little as \$200 but some es said the device will likely cost about \$500 HF's 200LX handheld device costs \$549 to \$600 The high prices of PDAs haven't helped the market, analysts said. Motorole, Inc.'s two wireless devices, Envoy and Marco, cost \$900 to \$1,500. Sony has already dropped the price

of its Martin Link PDA from \$600 to \$400 Andrew Seybold, editor of "Andrew Seyhold's Outlook on Communication and Comput. ing" in Routder Creek Calif. said amoral on named vendors plan to release devices this fall He said the new PDAs will be true "extensions of the desktop."

When PDAs first hit the market, they were derided by many as electronic organizers, so features that appeal to executives were added. For instance, Marco and Envoy offer an interpet etronic mail canability via RadioMail on the ARDIS Co. wireless radio network. But users want access via their own network systems, ac-

"The PDA will be a very good device once it ally communicates back to the user's own desktop," Seybold said, "Surveys have shown that people want a handheid computer with the ability to get them their own E-mail and their

To move ahead, the PDA market needs softare that provides applications such as impertints industry observers said In other PDA-related news, Motorois, Inc.'s Microprocessor and Memory Technologies Group in Austin, Texas, last week appounced a interoprocessor for portable handheid devices Motorola claims the integrated chip abould lead to less expensive PDAs because several

ctions are included in one chip. - Senior writer Jaikumar Vijayan contributed to this report.

Compaq unwraps Pentium portable while Digital, HP slash prices

By Mindy Blodgett

and Jaikumar Vilavan

Compaq Computer Corp. just week up veiled its long-awaited, high-end Pentium notebook just as a handful of competitors dropped their process. But a price war is not immunent, in-

dustry obs spriggs-based Company referenced its LTE Elife 5000, which will begin shipping by the end of next month. The LTE

Elite 5000 is a full-featured multimedia notebook with an to 2.76 bytes of internal storage, up to 72M bytes of RAM and support for two batteries. Pricing is not yet available Other features inclode a built-in CD

ROM drive and the Motion Picture Experts Group fullscreen, full-motor

video standard. S Strategic Decisio Meanwhile, analysts rajority (schi) of PC said price reductions es sili ese from Digital Equipment Corp. in Maynard, Mass., and Hey 2000, BIS forecasts lett-Packard Co. in Palo Alto, Calif., are likely due to readoust-

ments to the mar ket or from the rom panies clearing ou inventory to make way for new peod tects. Neither com-

nemy is a strong enough player in portables to spark a price war, and Last week, Duri tal out proces on its

notebook computers by 14% to 20% Prices of Duttel's submotehooks the HiNose Ultrus, will cost \$2,099 to \$3.850 Notebooks in the HiNote family

will will for between \$1.719 and \$2 629 HP followed up its deskton price cuts with similar cuts on someof its notebook lines. The company last week said it was colling back prices by up to 19% on its 4%6-based HP Ouni Book 4000 and OmniBook 600 ootebooks. For example, an OmniBook 4000C with a 100 MHz 486E0X4 chip and 520M-

byte hard drive will now have an estimated street price of \$2.500 compared with \$3.064. This is competitive postur-

PC local bus graphics



ing, not a price war," said William Ablondi, an analysi at BIS Strategic Decisions, Inc. in Nor

Still, the pricing action may prompt Armonk, N.Y.-based IBM to cut prices A spokesman said last week the com-

ont cutting o es on its ThinkPad poteboolo Officials from Dett Computer Corp. in Austin, Texas, said they are cor

with their level of pricing. The Dell Latitude notebooks cost \$1,999 to \$4,526. "I think some of the price reduction you are seeing are some companies adjusting to reality," said John Medica.

Dell's vice president of portables The pricing cuts reflect, in part, that active-matrix color displays are shipping in high volumes from Japan and Korea, pushing prices down. Other component cuts, including cuts in pro cessor pricing, are also sending market prices down

Remote workers gain telephony leatures on the PC. See page (u.

Digital trolls for PC users with cost lure

aking its hid to stay in a tight PC race, Digital last week said it was slicing the price of its corporate desktop and notebook computers.

prwell, Mass.

that by 100% a

ay PC. By the yea

Reductions in the e of Digital's Venturis and obris GL PCs, which range from (% to 17% come abortly after Compaq, IRM and rising player Hewlett-Packard spipped their PC prices. Diet tal new offers a 75-MHz Intel Corn Protings Assert Wester. ris PC for \$1 675 a \$220 and that brings its pricing more in line with competitors

What they want Digital's new prices could be good news for users such as anes Grigos, data process ing manager at David Clark Co. in Worcester, Mass. The company makes communicate

tions beadests. Grigos said b recently switched to lower priced Gaterary 2000, Inc. PC but would pay a small premi um for Digital models in the fature because the commune of

We'd like DEC to come back to us in the future fwith lower PC prices!, We have to lump through a few honor

with setting up a Gateway PC," he said

pes to sesert its intention to crack the top tier of PC vendors. Jumping into the price wars with larger-selling rivals is a most said leasifes Muse an analyst at Workgroup Strategic Services, Inc. in Portsmouth, N.H. The note. book price cuts, meanwhile

signal Digital's readiness to plear its stock before lates cing new versions of its Hi Note line. The move is anoth er indication of Digital's netitiveness Muneon

list price for a Pentium. und HiNote model drop \$310, to \$1,739. The company also sliced 14% off the price of its entry-level HiNote subnotebook, to \$2,669. The new tag lists for its

PCs come on the beels of Die ital's unveiling of new PC models. They include Celebris GL, a midrange busines ch-performance crephics

aimed at multimedia use





Don't pack around an old interface when you can replace it with a few clicks of the

What if you could move you can take host- or workstation-based CICS or IMS mouse. With Micro Focus Dialog System's 3270 feature, your CICS applications to a GUI screens and autowithout roughing it? them into Graphical User Interfaces. No C programming or API calls. No changes in business logic. No sweat.

The result is an interface that's cleaner, easier to use and integrated with other desktop applications. Then, once you've moved your interface logic to the PC, you can modify it or add new functions without impacting the business logic. Dialog System's 3270 feature makes the first step to Client/Server an easy one. It's one of the many tools within Micro Focus Dialog System; a system that gives you rapid development of GUI interfaces and client/server

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of Micro Feces



Way of Programming MICRO FOCUS

Dell strategy tackles | Sticker shocker dormant server sales

Hard on the beels of what appears to be a irly successful comeback in the portsble computer business, Dell Computer Corp. is now focused on reviving its coose server business

ecording to founder and Chief Executive Officer Michael Dell, the company expects to breathe life into that market sector via a series of mores that include the follow

elatroducing a high-end quadprocussor datab plication server m the near

Strengthening and building strategic alliances between Delt and key partners such as Ornele Corn' and Microsoft Corp. to jointly develop database and Mi trosoft Windows NT servers tuned for Oracle databases

Corn's LANDess

a Building and extending on its current partnership with 3Com Corp., partieularly in the area of 100Base-T 100M hit/sec. Ethernet technology a Developing network and system management products that will man into industry standard environments such as wiett-Packard Co.'s NetView and Intel

term at least, Dell will try to ride late('s P6 chip into the server space. The com pany has already confirmed that it is now

paring a four-processor P6 application symmetrical multiprocessor design That server is expected to start shipping to the first

quarter of next year A strong server humans will be vital to Dell's continand presence in the correctate market, analysts said. Last quarter, server resystee contributed only 3% to overall prompte of more than \$1.7 bit. hon Daukton PC countributed an overwhelming 82% of pro-Iraqe Conspos nue That makes Dell one of

the few players in the top lier

that, despite having a major

corporate PC presence, lacks a comitcant server presence That market is dominated by Compaq Computer Conf. HP and IBM. Last year, Dell tried to infase new tife into the business when it ma cruited Mark Garver, one of the top exceatives at superserver vendor Tricord Corp., to bend up Dell's enterprise effort But unlike Dell's potebook comebnek portables now account for 15% of Dell's

Despite deals, users are spending more on PCs

By Jaikumer Vilovan

PC prices may be in a freefall right now but ironically, users are buying more expensive systems than ever before Driven by an emerging class of perfor-

mance-hungry applications and operating systems such as Microsoft Corp.'s Windows 25, users increasingly are buy ing systems equipped with faster process sors, beefed up memory and storage, and added multimedia capabilities.

As a result, the average price of PCs from some major vendors has actually

Average Selling Prices for PCs rose for the og ver 32,568 \$2,445 \$2,504 \$1,811 \$1,820

climbed as much as 3%, despite pricing actions earlier lbs year According to San Francisco-based Montgomery Securities, Average Selting

Prices (ASP) went up by about 3% at Det Computer Curp., 1% at Compaq Compater Corp. and 99% at Gateway 2000, Inc. ASP reflects the average price a PC revenue - the server effort has been sold for in the last quarter. At Gateway for instance, the ASP for PCs in Merch

was \$2,543, while in June it went up to

Although the increase in ASPs seems marginal, it is nonetheless very signifiat, according to Kurt King, an analysi at Monagemery Securities. 'When you are talking about a situation where ASP tend to remain stable year after year, and when you get to see an increase of 3% ...

that's an absertation," King said.

Some users such as Jun Marra, a seni altant in strategic planning at Brig-ham and Women's Hospital in Boston, are siready seeing that in-

"We are paying an average of between \$200 to \$300 extra for every new PC we are buying today compared to what we were paying before" for an average 486-based configuration That is because new high-end, high-performance Intel Corp. Pentium-based sys tems with at least 16M bytes of RAM and a minimum 420M bytes of disk

space are being purchased at a very carby-and therefore costlier-stage, Mar-A relative hall in pricing activity over the last quarter also contributed in a mafor way to increased ASPs, analysts said

Users lay hardware groundwork for Windows 95. See page 43

News Shorts

Danger: New Microsoft Word virus

w computer virus that spreads when users exchange Microsoft Corp. Microsoft Word documents has been discovered. An infected system may place the virus, called Winword Concept, in a document that is opened and then saved using the "File/ Save As" monu option, said the National Computer Security Association (NCSA) in Carlisle, Pa. A PC may become infected if a dirty document is transferred to the machine and opened and Word executes a standard document-resident macro. A free fix is available from Microsoft and NCSA's Anti-Virus Vendor Forum on CompuServe (type "go nesavirus").

Bad air delays IBM disk array IBM's storage division suffered a blow

last week when it delayed shipments of its Remac 2 mainframe disk array by two months. The array was stated to ship this week but wound up in a deep freeze until late October Potential buildups of hydrocarbon contaminants in IBM's 4G-byte disk drives, in part. consed the detay, said James Vandersitce, general manager of the storage unit. Mainframe shops would be especially susceptible to the buildups becurse of their continual operations, he

Cheaper minis from HP wiett-Packard Co. announced a li-

9x9 KS series minicomputers that cuts costs for firms with fewer than 64 users. Starting Sept. 1, liceptes will cost \$49,000 for eight users, \$55,000 for 20 users, \$66,700 for 32 users and \$50,480 for 40 users. Previously, the smallest bcense available from the Palo Alle. Calif., firm was for 64 users, at \$84,450 Not to be outdone ...

iBM cut entry-level prices on its RS/8000 SP paradel processor from

\$138,000 to \$90,000 by strapping out the product's communications switch and making it an option. The two-processo model targets application develop ment, and some prospects had com plained that the communications switch was an unprecessary expense. IBM said. Software can also be preloaded for SP customer

The check is in the E-mail The Financial Services Technology Consortium, a group of 65 banks, tech

nology vendors, academicians and government agencies, last week announced plans to develop an electronic check payment system for the laternet The system, due to enter pliot testing pext year would let consumers use electronic checkbooks - in the form of PCMCIA cards - to pay bills or buy merchandise from retailers over the la-

Netscape extends browsers Mountain View, Calif.-based Nets Communications Corp. last week announced two extensions to its popular

Navagator browser for the World Wide Web Netsempe Chat allows real-tim electronic-mail conversation via chat rooms on Amen Online

SmartMarks is a utility for monitoring and updation on ers' "bookmarked" fa-

vorile sites on the Web Netscape also promised to ship Navigator Per ion for Microsoft's Windows 95 this

Z-mail E-mail package ships Network Computing Devices, Inc. last week started shipping Z-Mail 4.0

for Windows, an E-mail package for Unix, Windows and Macintosh systems and text-based terminals. The new yersion supports Microsoft's Nessuring Application Programming Interface and comes bundled with a TCP/IP

stack. Z-Mail 4.0 is \$165 per user MSN inspires antitrust action As Microsoft basked in the warm aft

giow of the taunch of Windows 95 and The Microsoft Network (MSN), Ameica Ouline, Inc.'s European parts Bertelsmann AG, inst week called for international antitrust action again MSN. But Bertelsmann will not file a complaint with the European Commi sion. An AOL official confirmed Bertolsmann's statements but had no official comment. "It's an easy story for them to remind people on bunnch day of this issue," said a Microsoft spokesman noting the lack of formal complaint

SHORT TAKES Digital Equipment Corp. will soon ship a version of the Open Software Foundation's Distributed Computing Environment (DCE) middlere supporting Microsoft's Windows NT. The DCE for NT products will run on either Intel Corp. processors or Dig ital's Alpha chips.

"Best Features" "Best Service & Support" "Best Ease Of Use" "Best Documentation" **"Best Partner"**

> CIO Magazine Readers' Choice kanuary 1995

Hmmmmmm. There Seems To Be A Pattern Here.



IT executives don't always agree on every thing. Except, apparently, when it comes to

Where in a recent survey of CIO Magazine readers, they overwhelmingly preferred CA-Unicenter for documentation, features, ease of use service and support, and as a business partner.

What's more, this is the second year running that



CA-Unicenter has placed first in the CIO survey for systems security for UNIX

So if you want the best integrated client/server system

what IT executives say it is:



IBM beefs up mainframe for DCE networks

BOSTON

By year's end, IBM will start making the ainframe a more compl in client/server networks that use the Open Software Foundation's middle ware to distribute applications across

Today, mainframes are limited to be-

ing clients in Distributed Computing Environment (DCE) networks, or "cells" But by year's end, IBM will begin betatesting a second release of its OpenEdition DCE for MVS software that enables System/390s to be DCE security servers.

Based on DCE 1.1 and planned for general shipment next March, the new release will also integrate IBM's main frame-based Resource Access Control Facility (RACF) security software with DCE's Kerberos security, IBM officials saud last week. Users should then be able to log in to a DCE cell that mixes mainframes and other systems without he

ing to key in multiple identifications DCE lets applications run over a comhination of systems from PCs to main-frames. The technology is a method of connecting departmental islands, allhough it has been adopted more slowly than proponents had hoped.



The upcoming DCE for MVS Version 2 will be introduced in September, but IBM briefed customers on the plane at a DCE developers conference here last week Also being announced in September is a package that lets mainframes be servers for DCE's Distributed File Service, which would enable users to access mainframe files as if they were stored locally

Attention grabber

The promised security features drew the most interest from early adopters at the conference. They said automatic may ping of user IDs between RACF and Kermers of the need to build and administer their own mapping tables "That would help us out tremen

ly," said Warren Bernard, chief architect for consumer markets at MCI Telecommunications Corp. in Washington. "We have a buge issue with log-one, and having a single one would help in our daily

operations and in incorporating new users into the network." MCT's Initial forays into DCE, for appl

cations such as I ransferring phone calls internally and processing credit cards, do not involve the company's main frames. "But it's not for lack of desire." Bernard said. He added that he hopes to eventually get the mainframe side of MCI into the DCE cell Integration of RACF and Kerberos is

one of the key steps that mainframe tops interested in DCE have been waiting for from IBM, said Michael Guidry, a technical adviser at Phillips Petroleum Co. in Bartlesville, Okla. (3) IBM links middleware to legacy com-

puters. See page 69.

Keeping client/server environments in balance so your applications don't take a dive.

Compowere EcoTODLS maintains that ordical balance you need for depictor, nex and opening system elements to get along swimmingly accession clean/services sovveniment in fact. Computers EcolODUS's the col/skilly fact-thursd systems. nunagement solution to facus on the sustained well-being of your applications in UNIX. Subset or Drade client/tenery systems. For example, you can use EcoTDCLS to scen your enterprise for potential problems and then launch EcoPMAN to probe deeper beneath the surface than any other product

to find the exact cause. You can even monitor executing SQL statements and stock the resources used. Thun it is a simple matter for EcolODCS other unique capabilises to set thresholds sound alarms and make the fix. You can easily automate complex provent tive measures to large your cleen/somer commonment in equilibrium. And only EcoTOOLS goes overbeard to provide advanced intelligent monitoring and tuning capabilities for you ngit out of the bes. That a what we call a true "budy maken"

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ent customers. Windows 90 the real world Thursday As users grabbed up the software and other goodies, there would be as more beta users to rely on. Starting at the epicenter of Microsoft Nation, we upled the grand unveiling at a num

1. SEATTLE was 16" buyers to The Incredi rse, an electronic sup here. At 11:04 p.m. - 56 minutes befor software went on sale — the large ngent of shoppers were from the oard set, many of whom had a parent in tow

Jerry Wilkinson, a parent and family therapist from Kent, Wash., was there with his 17-year-old son, Jared. Dad hadn't planned on buying a coe ter operating system in the middle of he night, but then, "I figured we could

do something father and son-ish, comter-serdish," Wilkinson explained. It the stroke of midnight, the Wilk ons were joined al the cash register by rbara Jackson, a real estate broker. "To me, it's just a real fun, exciting night. They've made such a hig produ

tion out of this. It's kind of like when a new car comes out," she said Along with her CD-ROM version of Windows 96, Jackson also had stash in her cart a radio-controlled Formula I car plastered with Microsoft decays. The toy is regularly priced at \$39.95, but for Win 95 buyers it was thrown in for a

mere \$9.95. - Julia King



lows 95 campaign, but the sound of cash registers ringing up sales into the wee hours of the morning was music to the ears of retailers

Stocked with more than 6,000 copies of the spanking new 32-bit operating system, some good deals on assorted bardware and about 60 nizzas. the CompUSA store here kept its doors open until 1:35 a.m. Hundreds of late night customers tapped toes in line for re than an hour to buy Windows 95, the new Microsoft Office and other as sorted software and bardware, as well

'It's an event, and I just thought it ould be kind of fun to come out and buy my copy of Windows 85 tonight, said one San Francisco compiter conlistened to three employees run sultant. - Lisa Picarille

3. DALLAS in the Dallaw Fort Worth area, home of computer superstore guants CompUSA

Inc. and Tandy Corp. Several area stores reported crowds of about 100 on the launch eve, though not all bought Windows 95. A sales rea rescribative for oc., who is supply chara-

er CompUSA outlet last Thursday where more than 500 shoppers jamm the aisies like lemmings to be a part of the historic release of Windows St. "It was amazing - we didn't anticipate the crowds being as big as they were. said Jeff Harden, a store manager He was in for another surprise. Anor

S. PARAMUS, N.J.

inance prohibits retailers in Paramus from remaining open after midnight a regulation that various local computer stores were violating. One policeman drove past CompUSA around 1 a.m. and soliced the crowds but didn't bother stopping - until 1:30, when he returned to pick up his own copy of Windows 95

6. WASHINGTON

in Arlington, Vs., who said be learned to use a computer just 16 months ago

eryone is happy with it." The magazer of one Enriesed Soft were store said it was full of customers when Windows 95 went on sale at midnight. These were mostly power users. and they were buying armloads of soft-

A man on the subway on Thursday us wearing a Windows 95 Febru and

the mayor of Fort Worth launched a pregram to begin the automatic uperade of about 400 city computers, with more to

was among the first to buy Windows 96 at a local Staples store. Though looking forward to the internet access feature for himself, Schanker said be doubted the new operating system would find its way into his law firm any time scon. "We still use DOS," he explained, "Ev-

ware," he claimed But at 8 a.m. Thurnday; the store was deserted.

said his company was belping Microsoft with its product rollout at a local hotel Would the man buy Windows 95 at the show? "No way," he said. "I ean't afford the hardware upgrades that I'd. need." - Gary H. Anther

Just jokin' around Humor part of the boopla - if you can take any more

By Stuart J. Johnston

Although virtually everyone is fed up with the hype and hoople surrounding the Microsoft Corp. Windows 95 Inanch. some still have enough wit left for a little humor. A few wags were distributing jokes last week via various electry mail systems, including the Internet. One amusing tidbit had IBM anno

ing that fouth Limbangh was now its official spokesman. In exchange for a (rathor large) seat on the board. Limbauch distely began tausting the "Win-Nazis" and asserting that First Lady His lary Rodham Clinton was one of the ar-

chilects of Microsoft Exchange Limbaugh, the joke concludes, has declared his laptop a Microsoft-free zone and says be will lagnet a fee-based are vice in Notes called The Warned Truth

Then, but on the beels of Macrosoft's reported \$4 million purchase of the comsercial rights to the Rolling Stones' hit Start Me Up" - for use in advertising ws 96's Start button - comes news of a hidding war for the rights to use another Stones tune

As the story goes, both Novell, Inc. and IBM are trying to secure the rights to "Sympathy for the Devil." While the targot andience is the same, this song would

be used in attack nds aimed at dome ing Microsoft - literally Other details of oc ad campaigns are still sketchy. But one industry purster quoting from Bob Dylan's 'Like a Rolling Stone," said. When you ain't go

reported much pillering from advance

shipments to area stores. On Thursday

4. FRAMINGHAM, MASS

let here just wout of Boston - was bet-

ter described as ComputerBackwater

but Wednesday night. Near-emets

aisles at the retailer left more than 25

yellow-shirted salesmen spending a lot

of time leaning on software and hard-

A couple and their sleepy 2-year-old

daughter walked the airles and politely

through some Windows 95 highlights.

At CompUSA down the street, things

were a little livelier, with balloons, non

alcoholic champagne and free copies of

Windows 85 for Dummies on tap. But

not everyous bought. "It's not even real

32-bit. They say it is, but it's really not,"

complained a teenage computer aci-

major from Boston University. -

They left without buying anything

ware displays, chess in brook

- at least the gian

follow - Patrick Druden

**** nothing, you've got pothing to low." Meanwhile, a par ody of another recent Microsoft ad cam paign appeared or the Internet "Where do you want to go to

Kim S. Nash

day? Never where you want to go We'll tell you where to go Not every bit of humor surros

Isoneb was fictitious, however Although Microsoft has licensed the rights to the entire "Start Me Up" song it did elect to leave out a few lines. One of the deleted lines was simply too raw to repeat in polite company But the other was a line that the company hope a never strikes a chord of recognition with Windows 85 users. You make a grown man ery. You make a grown manery'

Speaking of grown men - although this one was laughing comedian Jay Leno showed up at Micro soft's Senttle campus the day before the

is unch and took a spin around the company's us in Chairman Bill Gates' golf cart Reportedly a gift from Gates' wife, Melin ds, the cart looks like a giant Microsoft cuse. Good thing Windows 95 supp the right mouse button, so Leno didn't

have to make only left turns



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Apple to Win 95: You look awfully familiar

By Live Picarille

If you have managed to escape the massive kype, surrounding the launch of Microsoft Corp.'s Windows 56 operating system, you must live under a rock. But if you've missed rival Apple Computer. Inc.'s counterattack, you probably just blained.

Although Michael Mace, Apple's director of Macintosh platform marketing, said the Cupertino, Calif-based computer maker has several

stor, cast, cause computer macer and several threats under way to promote its Mac OS against Windows 86, its efforts are barely andble compared with Microsoft's maximoth \$200 million modia blitz, according to industry watchers.

That could be a problem describe the fact that

according to some observers. Apple is reaping the kind of publicity money can't buy, given the constant comparisons last week between Win-Apple's countermints

light is continuing the Mindows 95 Jupe outs the blooming offense:

B factores means and co-care services were

MAC OS VS. We 95 companions.

Bernes and III MACIETOSII ARE PC TENSO PRELICENORS.

Microsoft zips lips

CONTINUED FROM COVER

managers.
Other locations were more revealing, however Although CompUSA declined to retenae cary to also figures, company officials did estimate
that several hundred cipies were sold on average last Thursday at each of its 50 ionations. At
the Babbages and Software, Etc. chains,
polyshoppopies and sales were 20% to
40% higher than anticipated.
Por WestHarper Kenne. Inc. — on a

For "seattle-area Rease, Inc. — on of five companies furnishing Windows 95 belp deak support — the terms of its contract with Microsoft muzzied the first from disclosing any information about call volumes or the breakdown of ealls from bome-based vs. corporate PC merci.

Conversations with people who staff Keane's help center were severely restricted last week One reporter was occurred through the facility by no fewer than three Keane managers and public relations people who monitored all ex-

In disguise

Windows 95 banners and posters were plantered throughout the company, and many of the mostly male, twenty-searching staffers were wearing Windows 95 T-shirts.

The Windows 86 users whose calls for help ere patched through to any of Keane's 350 affers were supposed to think they were getdows 85 and the Mac OS.

"The impact [of Windows 85] on Apple is petentially very serious," said Chris Le Toco, president of SoftTracks Software Research, a market research firm in Los Allos, Calif. "Apple should be

cranking it up a little more, and they should be doing it now for the high buying season."

Media biltz
At the moment. Apple is countering
Windows 95 by barraging the media,
industry analysts and the on-line
world with daily releases touting the

Maciatosh's advantages over Wisdows 85. The theme takes apage out of popular income 'been there, done that.' Por example, the company sent out Tahirus bearing that slogan. The Tahiru lako lists the Maciatosh's technological advantages and the year these features were implemented White that isn't quite as attention erabbiar

as Microsoft's announcement, for which the company spent \$4 million to literate the single 'Start Me Up' from rock legend the Bolling Stones, 'we are reaching also of the people that do recommendations,' Mace and.

To reach communers, who are expected to make orthe initiation and the state of the people of the state of the state

Stones, "we are reaching alot of the people that do recommendations," More said.

To reach consumers, who are expected to make up the initial wave of Windows 85 huyers, Apple has doubled its advertising budget, according to More One offshoot is the comparative and that have started to appear in Macinitee and the comparative and that have started to appear in Macinitee.

ting answers directly from Microsoft.
"We want thus to feel very much like a sangle

"We want thus to feel very much like a sample company prividing support." explained Deborah Willingham, vice persident of Windows 95 support at Microsoft. After being examped with thousands of calls from users following the release of both Windows 30 and 31, Microsoft said it now has 1,500 technicians providing telephone support for Windows 50. Microsoft is benyinvegite control tartics also Microsoft is benyinvegite control tartics also

applied to its other launch partners — Unitys Corp., Digital Equipment Corp., Softmart, les and Stream Internation al. Inc. — that were handling overflow support calls.

A spokesweman for Stream international, ine. (formerly Corporate Software) said she could not disclose information about help deck calls. "Our contract limits us in terms of what we can say (about) the types of calls we receive," she said. "Mero-

soft is collecting all of that information."
Microsoft executives said they expect a high number of Windows 96 calls because of the number of people who will be installing the new system, not because of software problems.

But Windows 80 support technicians got extensive training sayway. As a result, staffers at Kenac's site—which began taking calls most some 600,000 Windows 95 beta users on June 12—are abundantly knowledgeable about the much hyped operating system.

Take 25-year-old Linda Hedland, who last week was answering calls from one of 10 cubicies in the "Romulus" section at Kenne. "I pretty much live, breathe and est Win 86, A lot of my social life is also around Win 86," tosh and Windows trade publications.

The company also is unched a television advertising campaign the day Windows 85 was re-

leased. The ads focus less on bashing Microsoft and more on what Macintosbes will do for users. But some industry watchers said Apple might be bel-

ter served by waiting a month or so until the Microsoft noise quiets down.

"The Windows 95 introduction will overwhelm Apple," and Jeff SB

verstein, editor of the "Software ladustry Bulletin" in Stansford, Cosm. Right now, it's pointless to try and be brard above Microsoft. The basic Mac vs. Windows arguments still haven't changed it's just that right now, Microsoft is taking no a

lot of media shelf space, just like they take up retail shelf space, "be said. But some users said less flash and more substance might be the right answer for Apple.

"In not impressed by the Hollywood instrucing. I'm impressed when a company does what they said they were going to do. Without that consistency and stability, [you] can't count of them," said Mike Bailey, a systems analyst Lockheed Martin Missile and Space in Sunsyvale, Calif.

A berry of new products debuted at the recent Macworld show. See page 49. What color is your

Apple has quietly established a plan to protect monagement the company has a change in control. Apple, which has desied that it is for sale, in long drop or the company has a change in control.

desired that it is for sale, in june drew up severance agreements, better known as golden parachutes, for its top executives. The agreements disclased in a recent filling with the

Securities and Exchange Commission — entitle executives to large payments if they lase their jobs or are demoted following a morger, sale of the company or

company or acquisition of a controlling interest by a new investor.



Linds Hedland, tike other Windows 16 support technicions at Ked said the lives, breather and east Windows 95

Windows 95 buyers get 90 days of free support After that users, who call Keone will be charged 530 per call

said Hediund, who was in cohest a Saturday night Windows IS launch party at the home of another Windows IS technician. Senior editor Kim S. Nash contributed to this report.

Windows 95 installs easily, our reviewer found See page 44.

Voice, data share ride on ATM

MFS Datanet, Inc. is offering users a ser-

vice that combines data and voice over Asynchronous Transfer Mode (ATM), which is less expensive than ATM for data and separate phone lines for yours The San Jose, Calif-based company is

pitching its Wide Area Voice Exchange (WAVE) as a way for high-volume users to merge their voice and data lines into

one high-speed network Users and analysts say the technology is intriguing but they have questions about the quality of voice service and

Catch the

WAVE

and Sec love. Calif ethern Telecon

Boh Womack, director of comservices at the Boston inw firm of Hale & Dorr, uses ATM to send data and has a separate line for voice between the com pany's offices in Boston and Washington "We're paying for a number of hand

widths, with voice and data on separate circuits. It would be great to combine them into a single service," he said Womack said he is prepared to "kick the tires in a fairly serious way" but he needs more information from MFS Datanet before he decides. His top concern or voice quality then price

Users beware

Tom Nolle, president of CIMI Corp. a Voorbees, N.J., consultancy enutioned that there are no industry standards for the type of voice service MFS Datanet is offering. "Users need to check with equipment veodors to make sure they use a common voice encoding technology," he said MFS Datanet, the operating company

of MFS Communications Co. in Owene said it will offer two classes of voice service - informational and toll quality which it described as comparable to a domestic toll call.

The company has launched the service in five U.S. cities and plans a larger rollout in 1996 MFS Datanet is charging customers an all-inclusive monthly fee that covers equipment, the service and sys-

Prices vary depending on the options a customer chooses. But the firm said a five-node site combining voice and data at T1 speeds would cost roughly \$38,000 per month, compared with \$45,000 per onth for separate voice and data.

sources, Inc. in New York, said this is the first commercial deployment of voice over a type of ATM called variable bit rate (VBR). He said the advantage is that it dynamically reallocates handwidth he-

Darren unice and data "VBR is far more officient than conwidth when there's voice to send." Note added. With co stant bit rate, the cus tomer pays for bandwidth whether it's being used or not.

Jennifer Pigg, an analyst at The Yankee Group in Boston, said there is plenty of user demand for voice over ATM but riers. The carriers view it as can ing their incretive least

Pigg said lack of participation by the large carriers has stymied industry group efforts to create voice over VBB standards. But it has also left the door open for smaller companies such as MPS Dataset to jump in and offer the service. Senior editor Bob Wallnes com uted to this report.



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Scheduling software ignites airline battle

Northwest alleges display bias By Thomas Hoffman and Mitch Retta

Northwest Airlines last week called for a government-imposed recall of PC software from American Airlines that biases Sabre Travel Information Nat.

work displays so travel agents see American flights "on top" or even exclusively The software in question, which has been dis-

sted free to travel agreeies, was specifically designed to change the travel agent's displays. The agency's systems administrator loads the ware and selects the options ch as "AA on top" or "AA only

A spokesman for the U.S. Department of Transportation said the Northwest complaint is "under review" American Airlines has sotil Sept. 5 to file an official res Then the department will determine if the comple warrants a bearing and further action

The complaint, filed with the Transportation Depar ment, charges that American's practice of distribut ing its Preference MAAnager software free to travel agencies is a permicious effort to evade the dec ment's regulations against display bias in sirline owned reservation sys

. Federal regulations outlaw such display hias on the grounds that the bias deceives consumers and gives an unfair advantage to the airline that owns the reservation system

However, travel agencies can legally use third-pa ty software to comply with the carrier preferences of corporate clients who have negotiated volume discounts and want to ensure their employees use those erred vendors. The American package differs in

that it gives preference only to American Bights Although American's add-on PC software is distrib-

Cabletron CONTINUED FROM COVER 1

echnology in the modules for stand-alone switches meaning usors will not need a full-blown LAN switching system, which could

With Ethernet switching, not each port to deliver a dedicated 10M bit/sec. of bandwidth for a sip 750,000 packets per second. gie power user or for a small sub ork of users. Tradition Ethernet, on the other hand, MMAC-Plus by a factor of 10 to 10 5 requires many users to share 10M million packets per second all bit/sec. of bandwidth. without blocking

Analysts spoke highly of Cabi tron's switching modules. 'This Plus to anchor a video network turns the MMAC-Plus into a very that editors and producers use to powerful LAN switching backbons create promotions that run bework switch at what could be tween the cable channel's movies the lowest cost in the industry. Pollack said. "With video we can said Daniel Briore, president of TeleChoice, Inc., a Verona, N.J., use all the performance and switched Ethernet ports that they cultancy. "This sends them to

it is considered part of the Subre "system" or if it qualthes as a third-party package, experis said

Northwest argues that American has an unfair advantage with Preference MAAnager because AMR Curp., American's parent company, is the only U.S. airline that has sole ownership of a poservation

Sabre commands the bon's share of computer res vation terminals used by travel agrepts in the U.S.

and Conada, with 77.219, or nearly 80% of all displays in use, according to a turney this year by Aveiness

Percent Vence a New York haved DEWYDADES In contract WorldSdup o No.

ervation system owned by Northwest, Delta Air Lines and Trans World Airlines, runs on 33,000 U.S. and Canadian terminals, ving it less than a 17% market share

A spokesman for American said the airline was "mystifled" by Northwest's complaint. "We feel the type of program we offer in Preference MAAnager is completely legal" under the Transportation Department regulations, which were updated in 1962 to allow travel agrecies to buy third-party software that restranges the system displays to accommodate even

Several travel industry consultants said Americ is exploiting a gray area in the government's regulations because the software is loaded onto travel aneacy PCs and isn't part of Subre's mainframe system -

where it would definitely be illegal under the regula-"It's a pretty sharp marketing plox," sead Robert angefeld, a travel management consultant at Laursfeld Fazzo & Associates in Incline Village, New Languield said be doubts American's practice is it legal - although "it certainly pushes the edge" - be-

whether or not to use the PC software The products will be rolled out Cabletron looks ahead over the next six months, the docevenue figures and projection Ethernet and FDDI switching uments said The Ethernet Smitch

Module supports 24 ports, as or

That boosts the aggrega

visching performance of the

Showtime relies on an MMAC

two ports as opposed to one

powed in six with the nidde model The PDDI Switch Module supports Cabletron's aid Ethernes ownering module handles on to 150 con ancients per second whereas the new module with its that Dealers Switch ASIC, can handle up to



'97

SCO maps out high-end plan

SANTACREZ CALLE

Continuing an aggressive product rollogs schedule. Unreon-the-PC paoneer The Santa Cruz Operation (SCO) hast week added management and development tools. And it chiseled out a map that leads its operating system from the 32-bit present to a 64-bit future by 1997

SCO is hidding to become a higger player at the high end of the chept/server market and a more cooperative citizen in heterogeneous networks. The company unveiled a more powerful version of its OpenServer operating system earlier this year and is rapidly adding features and ancillary products to support mixed Unix and Windows client/server en-

Santa Cruz on the move

SCO's Westif 95 technology, which lets Unix developers and users achieve the look and feel of the Windows 55 interface without modifying their software. Software licensed from Go Ahead Software in Seattle that supports alert-based systems monitoring and management for users of the SCO OpenServer operating system.

Back-up technology licensed from Cheyenne Software in Roskyt Heights, R.Y., which allows usen to back up Windows PCs and other clients from SCO OpenServer systems.

for SCO because "the smaller business [customers] in their

market pever need to bother with systems management, bu now they want to reduce the load on their administrators when things go wrong," said Angels Hey, an analyst at Input Inc in Mountain View, Calif. Also, she added, users want proactive systems management tools that warp of impending ase travel agencies have the discretion to choose problems

The first products resulting from SCO's new alliances will be available in the first quarter of 1996 (see chart). Until then, users and developers at last week's SCO Forum conference here said they will work toward smooth transition from earlier aperating system versions to OpenServer 5. You don't upgrade to OpenServer 5, you migrate to it," said David Gloria, vice president of technical services at

Computer Integrators, a software development firm in Richardson, Texas. Careful planning is required to avoid prob fems during say transition to a new operating system, he

Scott McGregor, SCO's senior vice president, outlined the company's Top 4 systems management priori Managing SCO environments.

 Making SCO systems manageable by others, especially platform vendors such as BM and Hewlett-Packard Co. a Managing mixes of SCO and Windows systems Managing other wendors' Unix systems

While he gave no time frames for achieving these priorities, McGregor added that users can expect SCO to announce a partnership with a major management pistform

SCO's plans for a 64-bit operating system — code-r Olympus — are a "competitive necessity if they want to in-teroperate with real workstations" in high-end client/server environments, Ney said. As more powerful processors and operating systems come to PCs, they will compete with Unix workstations to handle systems management func-

COMPUTERWORLD AUGUST 28, 1999



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TRULE 43: USE THE REST TOOLS

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Cisco unwraps router software features

Ry Rob Wallace

Cisco Systems, Inc. last week detailed new router software features that will support more secure and less costly LAN

The features for Cisco's Internetwork ing Operating System (IOS) router softable as a free upgrade to users who have software maintenance motracts with he company SmartNet encompanies three areas

security, policy-based routing and widearea setwork optimization. One new security feature, Message De-

on algorithm that encrypts data sent by routers in an effort to minimize the

chances of backers gaining access to LAN internetworks. The emerging standard for boosting internetwork security is being developed by the Internet Engineering Task Force.

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deal because you don't want people envesdropping on conversations across your network or injecting anything de signed to negatively impact the 'net,' sand David Meyer, a scalor network engi noer at the University of Oregon in Eu

gene, a large Cisco shop With another new IOS feature, at tempts to access a LAN internetwork and the resulting action are logged every five minutes and seut to the console of a pet

"You often don't find out that your network has been violated until it's too late," Meyer said. "With the logging capability I get the source and destination, the protocol and the port that [backers] at

work adm

Policy-based routing provides a mee mistrators to specify the type of end usors allowed to use vari

one WAN links. For example, using a simple set of cor nds, a network administrator could program routers to allow engineers run

ning file trans fer protocol to send their often **Fully licensed**

time-aemaltive traffic over in ndors that have Scensed 105 from Cisco tegrated Ser vices Digital include the following: Network lines, California System Inc., Chipcom Corp. Compaq Computs

lower speed Corp., Cascade X.25 links "With this co rillidae the logies, Inc. and doesn't define

corporate poli cy: policy de fines bow the network is used," said Kevin Delgadillo. ase product manager for

IOS at Cisco. Prior to this capability. there was no means to set any policy: Meyersaid ced WAN optimiza-Cisco also at tion features designed to minimize use and costs of dial-up links. With the SPX Spoofing feature, keep alive messages

are sent to the local router on Novell, Inc. NotWare LANs. The local router is then fooled into thinking they came from a remote router. As a result, the local router doesn't waste expensive WAN links to send the messages to distant routers.

Another IOS feature, dubbed Float

Static Routes, was designed to improve performance of Apple Computer, Inc.'s AppleTalk or Banyan Systems, Inc.'s Vines LAN internetworks. If a WAN link tied to a specific router goes down, the device can send traffic to an alternate router, which will transmit the data using Ploating Static Routers - cosentially the

routes of last resort - to its destination. SmartNet features will be incorpo ed in Release 11.0, which will be avail next month

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ASSOCIATES

d-alone PC users who depend on los risk losing critinal data as they move to Microsoft Corp.'s

sckup-related "gotchas" that can destroy data and derail Windows 95 migra

use of long file names, its Registry data- database between the time of the last base and potential conflicts

base and posential comments

Tape backup

Tope backup · Long Windows 85 file names can be truncated and the original file names istingtape drive (device driver)

backup and the time of system

der Windows 85 may not recognize an ex-"We have dealt with all three of those

integrator at Shadow Enterprises in ury, Conn., which has been beta testing Windows 95 for a year and a balf The probl ems apply only to users who depend on desktop tape backup software and hardware because most users of LAN-attached PCs are protected by serv

Be prepared Flagg advised PC users to "make sure you have a complete working backup before Windows 95 enters the scene." He noted that while Microsoft provides a long file name backup utility program with Windows 95, "It's a worksround that is very sluggish and not very ele

The same description applies to Micro soft's Windows 95 backup applet, which is "very basic, not compatible with other backup applications and supports only a

very limited set of tapes," he said. A Microsoft spokesman confirmed that running older backup applications un der Windows 95 can cause problems particularly with long file names. He add

ed that even though Windows 95 main tains a backup copy of the Registry on each

disk, DANTE should do regular backups to protect against disk failures. Also he said Windows 95's backup utilities

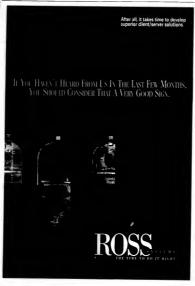
are provided as a courtesy to users. They aren't intended to compete with more elaborate third-party backup applica-According to Dataquest, inc. in San

Jose, Calif., only about half of the nation-wide installed have of 5 million standalone PCs are backed up. Even those users who do have backup software can run into problems with Windows 95. For example, they may be unable to get quick support when a major backup problem occurs because many hackup products are sold through OEM channels

"We have 200,000 registered users [of our hackup software), but there are about 2 million people using the product, and sometimes they don't know that we did the software," said Nick Biozan, a product marketing manager at Arcada Seltware, Inc. in Lake Mary, Fla. The company is mailing Windows 95 upgrade information to its registered users but

can't reach OEM users. Even when older 16-hit applications run trouble-free under Windows 95 "they [have to] run in compatibility mode. So Windows \$5 won't be running at top speed because you don't have a 32hit device driver," Flagg said.

To sidestep problems, analysts said sers should upgrade their applications to 32-bit Windows 95 versions with 32-bit device drivers as quickly as possible.



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Twoli Systems Corp. recently introduced an improved vertion of its systems and applications management platform The major enhancement is a new tweet on the console for tro that includes an automation engine and "rules hosider

dures. Tivoli's platform is called the Tivoli Manager

taken a peeded step in using antomated event correlation to support integrated, enterprisewide

Tivoli is really moving along with imoversents to TME [and is] able to go beyond simple event messages to automated actions" in response to even said Paul Mason, research manager of

However, Mason said T/EC 2.5 "can't do some things" that Command Post from Boole & Sabbage, Inc. in San Jose, Calif. can, such as manage main/rames and network devices. One user welcomed increased ma

but was skeptical about its near-term benefits. "Anybody would like to centralize and put all management funct in one product if they can, but then you are likely to run into compatibility feature" when trying to bring in data from

works and operations at Fleet Mortgage Group in Los Angeles

Moles said Fleet evaluated TME and several other alter natives but is leaning toward the Spectrum management system from Cabletron Systems, Inc. in Rochester, N.H. Cabletron unveiled plans tast week to add systems management capabilities to its Spectrum network management

But a Command Post user pointed to the quantifiable benefits of integrating management functions. Command Post's correlation expabilities resulted in 0.2% increased availability of networks and systems for Sprint Corp. in Dal las, said Dave Karthauser, a technical analyst at the tele

hunications service provider "That doesn't sound like a lot, but it equates to savings of roughly \$2 million a year" because the software helps spot and react to problems more quickly, be said. Without the correlation capability. several administrators would end up working on the same problem, Kart

> T/EC 2.5 will cost \$65,000, including software for an enterprise server and "s base set of branch fofficel servers." a Tivoli spokeswoman said. The total cost depends on how many branch servers are required. Adapter software module - received to link to customers' data bases and management applications with the branch servers - are provided

free of charge "That \$65,000 is the tip of the iceberg," said Frank Depbeck, president of Communications Network Architects Inc., a Washington consultancy. The overall cost of the syntem would be much higher in the large shops for which TME.

hat is your current horizontal

Category 3 -

12.3%

70.5%

36.05

wiring? (Multiple responses allowed)

Shallded twisted-pai

Vista console software costs \$795; agent software prices range from \$4,495 for a five-user pack to \$79,895 for a 500-user pack.

Palindrome opens up to new Vista

Palindrome Corp. last week appounced a new centralized storage management application that supports backup, archiving and hierarchicul storage management serves multiple do mains within an enterprise.

The Naperville, III., storage provider's Visual Storage Administrator (Viste) console man ages only client/server domains in which Palin drome backup software is installed. But the company plans to enable Vista to manage other

vendors' departmental backup applications "Viste all ows me to go to one screen and see the status of backups for our entire company and I'm looking forward to the day when more applications - like E-mail products - support this kind of contralized management," Dan Strohl, director of information systems at JSP International in Malvern, Pa. JSP has 10 No

vell, Inc. NecWare servers that must be backed Analysis hailed Palindrome's further an nonnoement that it will work to get systems it tegrators to adopt its products as the basis for client/server storage management outsource

Storage management outsourcing has been evident at the minicomputer and mainframe levels for years" and is "a natural" for today's larger client/server environments, said Dar Friedlander, a viorage management consultant at Circulus Strategies in Boulder Colo

To their liking Companies with many distributed sites are

more likely to outsource storage management functions than those whose operations are concentraled in a single large site, be added. But some users prefer to headle their own storage management. 'It's more economical

for me to spend time putting together [atorage management capabilities] than to pay someone else to do it," said Michael Atkinson, a systems administrator at Northwestern University in Chicago and a user of Palindrome's

Viste and other Palindrome storage mans ment products currently run in NetWare envi-ronments, but Palindrome plans to port its products to Microsoft Corp.'s Windows NT Inter this year, with versions for Hewlett-Packard Co. and Sun Microsystems, Inc. Unix variants to

with which asers can imple

istributed systems ment systems and applica tions management proce-

ent Environment (TME); the consols piece is called the Tivoli Enterprise Console (T/EC) Users and analysts said Austin, Texas-based Tivoli has

management of computers, applica-Pieces missing from enterprise

enterprise systems management at International Data Corp. in Framingham,

Correlation of management information across oil classes of systems and applications from the desktop to the mainforme, with minimal time est on defining environment Straightforward economical pricing schemes with no hidden

Users prep cabling for fast LANs By Patrick Dryder

Many large organizations are overhauling their network cable infrastructure to support high-speed workgroup applications, ac-Today, use of data-quality Category 5 unshielded twisted-pair

(UTF) cable has surpassed phone-quality Category 3 UTF among organizations with more than 1,000 employees, according to Sage Research, Inc. in Natick, Mass. The decision by Ethernet vendors five years ago to support the abiquitous Category 3 UTP cabling had propelled that 10% bit/sec. network technology to near-universal acceptance. However, users now seek more bandwidth, and any have switched or are switching to Category 5 UTP

most 71% of the survey's 126 respondents have Calestory 5 UTP installed for LANs. The majority of "fast" Ethernet adapters, concentrators and switches require Category 5 UTP to operate at M bit/sec. That grade also supports the UTP versions of Fiber sted Data Interface and Asynchronous Transfer Mode

ng filter optics ting high-speed needs, 43% of those planning to replace on within the next four years expect to er-optic cable. But Category 5 UTP will maintain its mo-

early 60% said they plan to install new network cabling in the

ly installed in horizontal wiring system

36.53 When will you install new cabling? Less than When. 6 to 12





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Computer Industry

Digital seeks PC crown

Despite setbacks, firm plans new models, distribution

By Michael Goldberg and Neal Weinberg Digital Equipment Corp. set a goal in 1984 to become a Top 5 PC vendor by

the end of 1995. But more than halfway through the year, the company basa't even cracked the Top 10

Three weeks ago, the company reported that PC revenue rose only 20% in the latest quarter after a streak of 100% in unes Within 49 hours of that announcement. PC business unit head Rech hard Auer was ousted.

Enrico Pesatori, vice president and general manager of Digital's com puter systems division, in temporarily leading the company's PC business unit. He said

he plans to name a replacement in a Pesatori, who joined Digital in early 1983 to bead up its PC group, said in an interview last week that the Maynard. fans -based company will continue to

seek first-tier PC status by increasing its presence in retail stores and intr ducing desistop, laptop and PC server modeix Pesatori said the PC business unit

goal is to increase rear one by at least 40% be tween now and next June Resauthentil address bution list over the next few weeks. But he so knowledged that Digital is frastructure and newbort standpoints - to ramp up to the consumer market

penetration enjoyed by PC leaders such as Compaq ComputerCorp. fou-first PC status "The retail channel as on the borderine of the consumer market, and the Dontal brand name does not stand exactly as consumer brand name There is a lot

of brand awareness to be built," Pesa Digital coordinates at PC sales efforts

systems such as the AlphaServer fam ily He said be will make certam Digital leverages its service organization which has a stell of 800 trained to sun port Microsoft Corn 's Windows 95 and Windows NT operating systems — in order to barvest sales throughout the

Digital needs its PC business to gros to pollunate sales of its servers and othcramducts and suppose be said Without rising PC sales, "you cannot afford to base the economies of scale

to defend the different market segments where you play To comprise with Compaq and Bewlett-Packard and IBM in those fields, you need the volumes" from the corporate and consumer sides, Pesatori saud Analysts said Digital is following the right course by seeking more consum

er PC outlets and offering new products, such as it did last week with the Starton series for bome piers and the Celebras for business desktops. Annbysis said the company is doing reasonably well considering its late entry into the field and that it may be unrealistic to expect a continued speedy climb in the PC market standings

Consent decree with Microsoft finally approved Questions linger about NT

By Mitch Retty WASHINGTO:

mored it was

This bearing will be short and sweet." That is bow U.S. District Court Judge Thom ks Penfield Jackson opened last week's status meeting on the government's 1994 antitrust settlement with Microsoft Corp. And true to his

Within 20 minutes, as required by a previous court ruling on the matter, he brusquely signed the long-delayed con

scat decree The second which settles charges that Microsoft stiffed com-Justice released see and times last week petition in the PC opthat it is continuing to erating system man stigate Microsoft to see if there have

ket, will govern Windows livensing practices for the next antitrust laws or the 6% years. Among oth consent decree. One er things, it prohibits charging a per-pro cessor license for try complaints about andling of Micro even if the Microsof operating system is not installed, a practice that has dis need PC makers from

loading non-Microsoft operating systems A remaining question is whether the decree will cover Microsoft's Windows NT. The accord explicitly states that it covers Windows 3.1 and its successors (such as Windows 95), but not Windows NT. However, the U.S. Court of Appeals in Washington said it is logical to assume that if Windows NT does become a successor to

Windows S.1, it will be covered. The Washington-based Computer & Commu nications Industry Association (CCIA) arrand that Windows NT is already viewed as a successor in the corporate market, but Jackson dismissed the trade group from the case and didn't rule on its motion to add NT to the decree. eman Greg Shaw in Redmond, Wash., said, "NT is not being marketed as a successor, so it's clearly not a covered product under the consent decree." Yet Microsoft has said Windows 95 is a short-term prod uct that will eventually give way to Windows NT Jackson's signature ended an antitrust bal-

tie that was anything but abort and sweet. After gutions, the Department of four years of invect Justice and Microsoft reached a settlement last July, but it was rejected by federal Judge Stanley Sporkin as "too little, too late. An appeals court booted Sporkin from the

case for apparent bias and sent the decree back to the district court to be signed. Jackson, who was selected by random drawing, had no choice

Government funds 21 research projects

Magnetic tape moving at a mile per inute, the Library of Congress on a rsktop and 17-byte optical discs are nded recently by the U.S. De-

The awards were made to high-risk ventures as part of the government's Program (ATP), which Republicans in Congress have pledged to scuttle [CW. Aug. 7). The Commerce Departmen sneed 21 new ATP projects, six o them dealing with data storage tech ogies. The projects are funded by \$71 million in federal grants and \$67 million in matching corporate dollars

The projects are geared toward do veloping technologies able to record data up to a thousand times faster and at a lower cost than is now possible The research is driven by the emergence of data-hungry applications such as video-on-demand and netrked medical systems, a grant re-

This is interesting stuff, and stuff eds to be done in order to me forward from a technological stand-

point," said Michael Sutton, president of Washington Systems Consulting. Inc. in Guithersburg, Md However, Sutton joined Republicans

in questioning the government's role in fostering end-use technology. "It is toteresting to us that the government would single out some of these companies to give them fairly serious money when there are other companies that have moneyed these of forts "he said

In one of the projects, a group of companies led by Terabank Systems, Inc. in Campbell Calif, will match \$11.5 million in federal is over five years to build a proto-

type 20T-byte desktop storage device. ally for NASA. NASA would use the units as compact, low-cost devices to re buge amounts of data from space probes, said Don Dempsey, president The units are expected to cost less

than \$100,000. They would use erasable optical tape, which is a very highape transport system, and laser arrays able to access data at 100M

Joseph King, bead of the National Space Science Data Center at NASA

Goddard Sparry Pilota Contrain Combelt. Md., said the devices would give space scientists quick access to ten bytes of desktop data. Currently, those

scientists must get data via wide-area networks from hure takebox system. at a few central data repositories, a process that is slower and more costly Kingsaid Observers agreed that the projects are maky "Some of this stuff never bapone," said Jim Pon

ter, president of Disk/Trend

inc., a market research firm in Mountain View, Calif. Porter said some of the boped-for advances in data storage technology may be rendered unimportant by advances in conventional magnetic disk record ing technology Recording densities are increasing at 60% a year and seem likely to continue at that rate for five to

10 years, be poted.

A spokesman at the Commerce Department said first-year funding for the ATP projects is assured, but their fate in subsequent years depends or congressional action this fall. Recent ly, the House of Representatives climinated all fiscal year 1996 funding for the \$341 million ATP, but the Sons has yet to take action on it.

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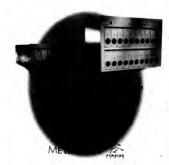


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Informix's Phil White on AI&T Enterprise Servers.

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184 What, Cir., Informat Software.







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Win 95 explained

Now that you've got your shrinkwrapped copy of Windows 95, you should become familiar with the new terms you'll encounter as you enter the PC's next generation.

Here's a selected glossary: . Windows 95 - The culmination of an t1-year offort by the PC industry to clone the Macintosh. • 32-bit — The approximate amount of space re-

maining on a 100M-byte hard disk after Windows 95 is installed. . Eight.three - File-naming convention on MS-DOS, replaced by Windows 95 feature that allows files to have easy-to-remember names like

Letter to mom about why I cannot come over Sunday for dinner · Multitasking - The shility to run multiple programs at once, making II much easier to piapoint which one just crashed your system

·Start button - The Windows 95 version of C1>

N

 Network Neighborhood Windows 95's term for the col lection of computers in your office that can now more easily create and exchange multiple, differ-

ing versions of the same data. • "My computer" — What your PC was before you connected it to the Network Neighborhood. . Upgrade - Software industry term for the proeess of seiling a user the same word processor for

· Windows NT - Microsoft code name for Windomos 98

oce release -- Computer industry term for software released about six months after shipment of the original product that does what the original product was supposed to do. Single Inline Memory Module (SIMM) — Spi-

der-like computer chip used to add RAM to a computer. Become familiar with SIMMs. You will buy them by the bucket.

The Microsoft Network (MSN) - On-line service owned by Windows 95's developer and offered automatically to every Windows 95 user and which is in no way monopolistic or has any unfair advantage over any other on-line service by virtue of being right on your screen all the time. Honest.



Software piracy: Cheers, jeers and tales from the front

ness of the illegal resellers and the volume of the pursey business (CW, July 24). I am astonished at onishment. Where have you been for the past 15 years? Bill Laberis' editorial igments.

this amusing tale ... would be just that - a nice yarn - if it didn't cost the companies that wrote the softbillions of dollars per year." I find this sentiment genuinely laughable, considering that on page 32 of the same issue, you report record quarterly guins for the computer industry. Software companies are nof being burt by piracy. Is anyone bothered that Macrosoft as I making quite as much

money as it might were piracy mi-Piracy exists because legitimate licenses are expensive - 1 youd the means of most people oversess and beyond the means of many people here in the U.S. That's why piracy also flourishes here at home. Domestic piracy can't be controlled so what makes sayone believe that the slightest

dent can be made in the practice By the way, would Windows bewhere it is today if it wasn't copied freely, like its prodessure. DOS? Mike Rotchelos

Armold, Hd. http://www.clark.net/pub/mike. bathnikebatilielask met

The software copyright situative ironically continues a historical trend: A century ago, the U.S. was one of the worst thieves of intellectual property. Developing counes tend to masappropriate the notogy of more advanced na-

tions as part of their economic development. The solution, as you described, involves governmentto-government negotiation) be course private enforcement is often

impractical or impossib A ficensing system would be more effective. Payment could be made on a government-to-government basis. Upon isale of the licrased copies], the proceeds, tess actual expenses, would be repaid

to the vendor-victims. U.S. copyright owners criner at the thought of compulsory licensing which undercuts ownershi and control provisions of nation and international copyright law. But at some point, realities of the international marketplace must

intrude. Laws ean protect "value but not obstract morality Robert W Dilbert Floyds Knobs, Ind. RDibertN@co

No real loss

On the front page of your July 31 ssue you included a pull quote from your Novell story that states, "Some ingenious users have managed to inveigle 'bootlegged' copes" of the NetWare requester I'Novell on target to ship Win 95 ster"]. But you have a separate article on the same page ro garding rampant software piracy.

Are we saving it's "ingentious" to "bootleg" prerelesse copies of software but illegal to do so with released software? It's probably the same people doing both

Mark A. Nadio Fort Colling, Colo. 74950 1509

Software piracy should be a major concern for all of us in the legitimate information systems field. Our IS departments support and enable our companies as they compete with others around the globe. Some competitors reduce eir costs relative to ours by using pirated software. They imple ment systems we can't imples because we can't fit them in the budget. It isn't just software von does that are the victims of piracy

David M. Weaver WinnerContes Concord, Cattf.

per@mercury afay esh More letters, page 10

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CD-ROMs: Glitzy and wrong

David Michael Bernard



CD-ROM telephone directory

is a great idea, right? You can

it home, tear open the container and load it

that comes to your normally

At this point, many people are shocked to

discover that they do not exist or still live with

their parents or that there is some other error

Here is an example of state-of-the-art tech-

uology that bombed out. Many people are so

misled by the technosleek mage of CD-ROMs

that they figure the information on that riesm-

ing disc is as good or better than in the book.

A major reason for the inaccurate and in-

complete data is that the original source of the

information — the local telephone companies

that rule the world of telephone numbers — is

- they do. One gets data-entry clerks in China

to input the data from telephone books and

not involved in the CD-ROM directories. Not that the CD-ROM makers don't try hard

The fact is, it's as good or worse.

in their listing.

self-centered mand - took for your own

CO-ROMs aren't as courate, speedy or durable as end users may

es multiple accuracy controls. But the sele phone book is outdated by the time it is pub

Correctness also depends so the mand timeliness of distribution. At best, the CD-ROM is as accurate as the phone book, which is just a snapshot of data that changes daily. At worst, the CD-BOM version may be a year behind the phone book.

pense legal or medical advice; they are not cessarily any more complete or accurate than the latest book on the subject. For data that is constantly changing (such as telephone directory data), on-line access to a database (What a concept!) is the only means

stribution that maintains its integrity. CD-ROMs are all the rage now. You can find local video store. They have a high-teck image that sells, but they are still a static medium that is only as good as those who put it together

Then there is the s test: With a PC and CD-ROM on your left and a phone book on your right, see which one allows you to find an entry faster. I'm fast with the CD-ROM software, but I'm

even faster with the book Besides, you can't put a bot cup of cof-fee down on a CD-ROM like you can on an oldfashioned phone book

There is a miscopreption that CD-ROMs last ager and are more durable than other media. While that's a valid assumption when comparing andio CDs with vinyl records, it doesn't hold true for heavily used CD-ROMs. CD-ROMs able; I have witnessed the demise of several over a short period of time.

So remember that CD-ROMs are great for static reference works, but they have their list itations. They don't last forever, and they don't cessarily have the best information. If you need medical advice, call your doctor. Don't call CompUSA

Bernard is a corporate IS director, entrepressur and conceltant is New York. His Internet address to

Marketing triumph, technical yawn

Max D. Hopper



teeting, marketing and distri-bution has a vapor trail of peros. No information systems product has ever had the notestial to all feet so many users. And no software release has ever aroused so much com on our been so beleasureered by bureau

cratic intervention. One question worth pondering is how Windows 96 will weigh in as an IS milestone in the als of computerdom a decade or two hence In an industry as young as ours, it may be naive to speculate on historical significance and even rinkier to attempt a future perspective Still, it's interesting to reflect on the probable role of Windows 95 in any 15 hall of fame. In the category for gennine breakthrough in technology, I don't think Windows 96 is a se er for top honors. I would aware that positiou to IBM's System 380, which was introduced in 1964. For its time, I believe, this mainframe system represented a revolution ically new emitter-coupled logic circuitry, its

The hype is great but historians won't be ng Windows 96 in the technology hall of

lete family of large and small computers, it presented unprecedented new cape bilities that changed the course of computing

The 360 series was a triumph of technology Nor could Windows \$5 be described as a breakthrough product in terms of machine, it builds on the previous version of Windows. ch in many respects was a somewhat flawed version of the graphical user interfe popularized by the Macintosh in 1964. In that sense, the case-of-use bosons would have to go to Apple with an acknowledgement to the pio neering Xeens Star GUL which inspired both the Marintosh and Next Computer systems These products, whatever their market suc cess, were triumphs of aser friendliness that paved the way for broad consumer acceptance of the PC. In fact, if any of these companies h

If Windows 95 is accorded a place in the IS pantheon, I believe it will be as a marlesting triumph. Marketing has long been BIB Getes's graius and is fundamental to his company's phenomenal success. Surely this new operating system will provide extended expabilities to current Windows asers and perhaps surpass the edge that Macintosh and OS/2 users have s njoyed. Whether it will belp Microsoft ex lend its present market share remains to be area, but the inertia of a massive installed base

Let's give Microsoft credit, though, for he ated that inertia on its own corporate am. No company has been better at driving IS products into the marketplace and achieving acceptance by tens of millions. No company marketing and distribution issues of doing

Will it fulfill the considerable expect has generated? Only time will sell. Will Win dows 95 he surpassed by even more capal products? Of course it will. The question is who will build them? Perhaps Netscape!

Hopper, former chairman of AME Corp.'s The Subre Group, is principal of The Max D. Hopper Asso entranev to Dellac

This yard with NO fences brought to you by new Microsoft Office









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Americans themselves fuel the pirate trade

I am a veterou of the U.S. Air Porce and spent one tour in South Korea in 1990. In the shopping areas around most U.S bases, you could find stores that sold prrated software (In Depth, CW, July 24) Most of it was sold to these stores by American service personnel. These stores stay in hustness because

of Americans out to make a quick buck by selling software stolen or copied from base agencies, homes or friends. The prices were relatively low; and if you needed a masual, no problem; they had copies of them, too.

copies of them, too.

Software princy will be hard to stop. As long as there are streety neonle out to

By 24] make an extra buck selling pirated soft res by ware, there will be people to buy it.

> PC analyst Chicago 74750 2016 communerus com

D.S West

What an efficient marketing strategy instead of paying to distribute free software to gain market share like America Online does, software makers have someone doing it for free Printed soft-

ware is bought mostly by students, startups or private users, and mainly for evaluation or learning Castomers in Eastern Europe are very brand-scatitive—when they get resources to buy the legitimate copy, they do. The legitimate copy is then proudly displayed to send a measure to

the customer: "Look, we are a stable, prolitable company."

If I am competing with Microsoft and my software is not being pirated in China, my investors should start to worry.

Vendors compromise by attaching enough negative stima about stoke intellectual property so that only the economically desperate will use the stoken goods. But at the same time, they don't stop this free technique to gain market share through the use of effective copy protection or energytion.

Jiri Janecel Snohomish, Wash janecek@haloyon.com

The articles on pirated software were most interesting. I especially liked the comment about unneconstructed Bolsheviks loving Microsoft Word 8.0. Word 8.0. performance reminde med a Sovjet minlatry cranking up to meet a five-year

However, I take exception to your editorial statement that "Clinton] and his minions at the Commerce and State Departments sit idle while the Chinese, who have a \$15 billion trade surplus with the U.S., allow software piracy to go on unchecked."

First of all, President Bush also was "while the Chinese ran tanks over protesters, produced goods in prisons, pirated software and ran up a hig supplus. Second. Chinton hase't been 'idic' at all. Don't you recall State Secretary Warren Christopher's trip to Beijing and the deliberate insult by their government?

But finally, the truth is husiness sorn!s Chiston to do exactly what he is doing.

Other industries that want to sell in China are very nervous about anything that ripples the trade waters. Cliaton is an easy target, but put the hulk of the hiame where it belongs: in corporate America.

Jim Morie

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Four industry leaders bring a whole new perspective to client server financials

Inside.

In essay or the role of financials in the client server revolution.

There case studies from four cutting edge companies.

.

Setting new sights on client/server financials.

lt's a story heard in corporate boardrooms around the world: Move to a new information distribution system, or move out

Microsoft of business. For some time, the answer has been to move off the mainframe and on to client/server solutions. But for all client/server's promises

of a new computing paradigm, it seemed that only the top ties of companies with the clout to drive development and the capital to invest could afford the shift COMPAG

All that is changing. In this special supplement, you'll read about how client/server has come down to earth in the form of affordable, accessible solutions from Microsoft,

Platinum Software, Compaq and Intel. Starting with the essay on client/server's cutting-edge technology, you'll see how chent/server solutions are becoming more accessi-

ble for more businesses. And in four case studies, you'll see how companies like yours are using these

solutions to affect deep and lasting change in their financial systerms, and across their businesses. Whether you plan to migrate now or in the future, their stories will

change the way you see client/ser

Client/Server Visions and Realities

to Cherul Currid

Is chent/server computing ready to take over the world of linancial applications? After years of afchate and lab starts, there are clear trends in both technology and market acceptance that make the transformation to chemisers or meytable for ind to large steeding measures the choic isn't whether to move to client/server, but when-belong or alter your compensor

Indistry analysis and researchers show steep using umformity in their judgment of chent/server acceptance cent of Fortune 1000 companies an amplementing some

Results from researchers conductor's International Data Corp s (IDCs) 1945 Global II Survey concur Over 60 percent of the respondents said they have or were plan

ning to more to, client/server solutions And researchers at Dataquest. Inc., expect the client/ server market to use at twice the rate of the occual conputer systems market during the next four years. Datasmes predicts sales of servers will double in the next three years to reach an annual rate of over 315,000 usins worldwide-

What's lucling the move to client/server computing? According to Carried & Company analysis chemiserses platforms make sense in a husiness world where people need flexible access to information. The old method of providing pre-formatted batch reporting doesn't satisfy the needs of increasingly suphism and users or compen two industries. It doesn't put decision making information into the hands of the right people

Further, the re-engineering rage of the past lew years. also caused business managers to question every practice to how the phone is answered. If a computer system case provide answers to new management questions, it moves to the top of the replacement list

Surveys of IS professionals show that accounting applications are the liest choice for iginal chem/server implementation forcister interviews with serior Is managers rescaled that 84 percent expect to implement client/server applications to the linear, of and manufacturing area within three years. Of those moving to chem/server. +5 percent will purchase application packages rather than build their own IDC study is agrees. It names accounting as the leading segment among enterprise applications for chemi-

server deployment Why? According and Immediapple, mens truly span enterprise mioritation needs and provide entical information to executaves. In fact, as much as 85 percent of infermatten analyzed by executives is littaneial

Further serior linance professionals are keen to share lman, sal data among executives in an ellon to guide overall husiness strategy. A recent IDC survey showed that the

· Inning and availables of intencial mioringsof

· Irregration of Jimans, sal and non-

 Emancial services to operations Clearly it to easy to demonstrate the need and desire to more accounting

and frame of apphietrons to a flexible compuning platform 'Cheun/server as brecature lifts the full with built in capabilities that allow it to work with a variety of data analysis tools

Build versus buy

Coston-developed computing appli catacity are giving way to purchased packaged software. According to HX. falcs of packaged chemoserver applica tions are forming as customers more toward plag in solutions. IDX, expects pa. kaged a herst/server applications to continue as the industry's largest and lates gowing spencer with a megrowth rate through 1999 The decision to buy rather than

huild chem/server accomming applica two-r-cay to make I-mancul and B managers cate loss pressury reasons

· The need for quark deployment

. The use of standard approaches · Organicost of ownership rooms

Many organizations lack the gr tools revessary to embask on extra

in house programmers must water a sample and features a more to cake a good programmer six months to a year to fully analyze." data and application requirements and their learn all the mances of a full Hedged application development tool

These steps are unnecessary when packages that provide highly customized features are acadable

Further since pressing business needs require quick action theres no time to custom-call accounting applications. Packaged software can be implemented within a window of twin to see more by

generally takes a great drail of time to create test, cheig and implement Finally, most organizations are placed to learn the extens to which plus karged polistions can be customized. Using sechnology sooks such as Microsoft Excel and Access, compenses cent takes a good fat between their business practices and packaged software Microsover by lever-

aging advanced reporting capabilities and common desktop productives took they can easily respond to changing business needs

lechedagy pasts

The changing mix of computing hard-

ware, robust operating systems and packaged software has made the move to client/server an attractive option. Ruther than trying to retool existing, legacy systems, business-minded managers find it ensert to they low-cost—but advanced—hatchware.

Todays solutions, based on massmarkered hurshum such as Intel macroprocessor-based servers—and subsus operating systems, such as Microsolis Windews NT—create options that were neither available not comprincilly vublic three years upo Sophisticated operating environments

Sophisticated operating environments layer enrated a simplified approach for companing For example. Macrosoft BackOllice for Windows NT seamlessly linis Windows-based deckaops to coporate information, regardless of location of original format Clearly powerful node that manage the deckaop-to-server environment are available.

Changes in a company's options for chana/server technology center around advances in both technology and user acceptance. Tumbling technology prices provide yet another strong incentive for making a more. For example, since 1991 the costs associated with processing, storing and sharing data have plummered. The cost to perform one million instructions per second

The cost to perform one million instructions per second (MBPS) had chercased from \$93 in 1091 to \$20 n 1099 5 milding the cost to store a megabyte of data has plunged from \$7.28 m 1991 to less than \$4 cerns study, according to Distagene Sharing of distributing data via a modern, also has disopped exponentially, from \$1 per megabyte in 1991 to obsort like crisis in 1992 to a

Although the declining cost of raw computing power is always wirecomed, two other factors have emerged to make microprocessor-based technology attractive for missionentical computing applications. These are manageability and solability.

Today, hardwar makers are using sophysicated richmiques to make low-lous servers immor manageable. Rather than simply turning a PC on its side and calling it a server, some manafacturers are building in advanced limit management capabilities. These include monaging and reporting features, redundant servers, backup servers and fault-oldering driver areas.

Company, for example, pincered technology that worksho early server component and darks a system operator of an unusual conductor earlish. These servers are availar person to profite mobile on the public new transparences and the profite mobile on the public new managements of the public new managements of the public new managements of the public new pre-training and pre-t



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Scalabdiny is another important factor in the server equation. Scalabding removes that technology additions required to scalabding removes that technology additions and opportung by sentens, such as Company Debas Sentel. Micropol Windows NT, offer the addition good with the meetic of a beautiness fiber, unit support multiple procussions large amounts of disk strongs and large immbers of sentens large amounts of disk strongs and large from the sentence of the



Beveloping trends

There's no doubt that the combined forces of business pressures and available technology make a compelling case for chent/server solutions. Few originations can tolerate systems that don't do the job or provide effective management information.

Today's options, including ready-to-use software, plugind-play hardware and robust and bulletproof operating systems, can case the adoption hundler. These options allow organizations to move quickly toward the resolution of nagging issues caused by legacy systems.

Curred of Company expects that the market for application servers will accelerate throughout the halance of the decade Albough they currently constitute an estimated 20 percent of server sales, we project that application servers will account for 50 percent over the nent three 50 five years. Packaged software will also continue to emerge as the preferred method for companies deploying core business applications, such as according and manufacturing. Companies will gent competitive advantages by strategically using the information from these systems—most by cruiting costom data processing applications.

VARs (withe added regilers) will play a key role in the transformation to chearly-erre solutions. According to a recently published collapped, 12-8 persons of computers surveyed already use the servores of VARs for help with chearly-erre applications. Cumfe of Computing believes that percentage could rate to about 40 percent or more as VARs and value with specific experies an inchmology integration plate stocknops for soming up software to get integration plate stocknops for soming up software not seed.

best support the business. The dramatic problems of technologic coupled with features that make servers nearly solf-managing, will continue to produce constanting resources for the matter of legacy spaces. Mid-seed open managing, will continue to produce constanting resources for firms to serve all elegacy spaces. Mid-seed open managing could be the quarkets to accept these technology managing specially have fewer intensivated legacy spaces and cast make technology are estimated.

Is chem/server computing ready to take over the world of financial applications? For progressive organizations, the options available today create excellent opportunities for implementing more responsive business pytems. The technology is ready Business managers must now ack themselves. After use?

Rout Denyl Cornil

Cheryl Currid is president of Currid for Company.

a Houstin-based technology studyes and advisory farm.
Me Currid Interess internationally about how to reap the
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Century 21 Real Estate Corporation: A remodeling job

Scribble your request on a piece of pape tie it to a rock and throw it over the wall That's how Lisa Kingston describes most relationships between 15 departments and their companies. At some point in. the future, the answer comes back over the wall. 'Maybe as right, may be its not

but that's what you get," she says Kingston should know. As directo of financial information systems for Century 21 Real Estate Corporation she used to spend a lot of time behind the wall, trying to get answers out to the financial team. 'We've broken down those barners now "she says "Theres much more sharing of information."

One of the barriers was a 15-year-old character-based manacomputer system with dumb terminals and custom-writter solware. For managers at the world headquarters in Irvine, Calif., and at the seven subsidiaries around the course volumes of financial data were viewalls. maccessable. This was a significant problem for CENTURY 21" and the CENTURY 21 system, comprising one of the world's largest real estate sales organizations, with more than 6,000

demly owned and oversied offices around the globe

Great cation under change In 1988 management began evaluat

ing how the financial information system could be improved. Everyone soon realized that change was needed on an enterprise wide basis and managers began talking chent/server

We investigated solutions and Microsoft was one of the leaders in chent/server technology. We began a relationship with them, using the full state of Microsoft prod ucts," says Kinggton, Macrosoft SQL Server was proposed as the relational distribuse management system ensuring compatibility with the existing applications

CENTURY 21 also chose Plannum SOL Enterprise from Platinum Software Corporatio because it met two critical critic it was the only complete, fully integrated financial product with a client/server archaecture, and n offered Microsoft companibility By 1992 Platmum SOL Enterprise was up and running

at the international headquarters a Compaq ProLune with two Pentium* processors, 64 MB of RAM and 6 GB disk space is currently in oper ation. Two servers are planned for each dryssonal office, and Kingston repeats that the hardware systems have been yery or hable

In addition, Compaq Insight Manager' has proved helpful as a proactive server management system, predicting faults and monatoring performance to preven

Now she says, manual enery time has been dramatically reduced, and financial managers are re-engineering basic codes and procedures. They're also performing analysis on a vanety of immeral indicators

The client/server system has extended information beyond the financial depun ment walls and in to other areas of the company 'The accounting staff can look at financial information and everything else it touches." Kingston says "They don't have to log into six different systems. From their perspective, they can see much more of the world and how it affects their business needs

Because financial managers are perform ing more analysis, they're also planning better strategies. 'Il a particular product line usn't performing to plan, we know about it sooner and we can act cauckly and cut our losses, rather than taking years to make a decision, 'notes Kingston



Cutting closing time in half

in addition to trimming general ledger transaction time by 30 percent, Kingston. reports that closing time has been cut in half, from eight to four day's "We can also create recurring and automatic transactions so that on a monthly base they generate themselves, instead of someone having to re-enter the same

Re-engineering is more than a trendy buzzword at CENTURY 21 as it moves toward a truly emerprise-wide system "When it all fits together." Kingston says, "it's very elegant in a true sense of the word

Ceridian Corporation: No shortage of information

When you provide information services to the world, you detern have a great plan for getting information to your own management. As Cerdian Corporation, a defense electronics and information services company; Insurced data used to take a slow course from the company is backquartes to the cost center managers scattered throughout the company's three business units.

business units. The problem was the company's Cleveland-based mainframe. The McCormack & Dodge system running on the mainframe demanded some senous attention and couldn't keep pace with the company's changing requirements. "We had to take hard-copy repons,

We had to take hard-copy repons, copy them and mail them out," says Jim Purgacon, corporate controller "Managers often wated until the middle of the manth before they saw reports of what happened the previous month. And it was difficult to tell what was in those mainbers."

Furgation and his team provide accoupting for Cerdina's corporate criter and benefits accounting for three autonomous operating units. Employer surrounding between and Computing Devices International Each of the business units takes independent systems directions.



In 1993 the nearly \$1 billion company pushed the envelope on information across when top ultrangement amounced plans to sell off the Cleveland data precessing center Suddenly, Furgison had 18 months to select, implement and train users on a new financial manage-

Futgosen, along with John Learhard, manager of cutternal inportung and systems, opted for a move to cherokerner. The second state of the control of the control SQL Server for NI and then purchased. Futnems SQL NI cherokerner femonate applications from Platterium Schwarz Carporation. Cendum's corporate office work live on general ledger law january. Accounts payable followed closely behand on Manie.

. The seam made its desidline, but more important, Furgueon reports that managers can now access financial information directly from their PCs. "With SQL NI, we can put like on the network and allow the cost center managers so drill down to the level of detail they need." They've become more active pintaripants in managing their numbers."

fast information access

Instead of warming until the middie of the mental, managers now access month-end reports in year two drays Lexibant days the information also is more definition. The control of the control of the held behas was in the numbers." he ceptures Now they can look in the database and get information on, for example, wheth bills were pagd and when So they can make better, more informed decisions."

Cendran's corporate center has taken an integrated approach to hardware and software, with Compag ProLiant servers based



on intel Penerum processors. "Intel processors are as important in the clients as they are in the server." Leadurd says "We need a lot of hunsepower on the deskuops: so we're running all Intel processors as our corporate center and most of the business units. In fact, everything we're buying right now as Penerum. The Company servers have been very evaluable for as:

In addition, the system is handling beavy volumes of roughly 6,500 to 7,000 transactions per month, and up to 600 invoices in accounts payable

To keep tabs on the servers, Cendum uses Compaq Imagita Manager on all servers, and Furgueon reports than managers have been very saredied with as monitoring capibilities.

At first, Furgison was concerned about the complex mameranite associated with the chemisterer destinations. Now he says the chemisterer destinational system proundes a new flexibility for Cendisph corporate center. According to birm. "We control our schedules now, and we're more responsive than ever?"

Nobel Insurance: A plan for success

Walls Schlaggel knows his basenessall secured their Assac president of a counting for Sobel howards; Corporation Schlaggel and the other company managers and quickly access humanal information for any of Sobelsseson operating times including a Berninda parent companis But that

We were running general degat or an AVAPO and ALVA bened accounterpary, althe system in the White he are sensed quanterly instructed waternesses. In rates with all three companies and all the manual processing see were deen g as sould have been impossible as-go monthly. Bett natural growth grapes to ago planes reserve have a compliant good and a service of the companies when received used, or orthoso marriers. So the large sound at most companies were—and Lones in thomas low marches.

To empower managers at the world headquarters in Dallas, and at the samous compoures. Nobels management began earthing for powerful end user database querying tools says systems managa. Faol kosskir. We knew that chemiseries was the way to go." The states. The company which has \$50 million in amoul resenters was already following the Microsoft path, basing recently.

in annual rescriters was already following the Massivelt path having recently attainabilities on Macrosoft Ulike Residers are that markowing the field of solutions, was relatively easy since for some Plannian SQF. N. I from Platinian Solbs are Corporations was the only client/server financial apply action has old on Massival SQL Deserver.

The two-month countdown Alta i selecting Plannium SCA, NT Account

Equilie and several folige for all sever hobel computes he ram also hought in Compact hardware powered by Intel-Termann processes After an almosttive and the second processes and an almosttive and the second processes and almosttive and the second processes and almost with the lot accounts popular but more affect and the process and the processes. Sallingard step to make the control of the processes and any product responsibility concess and our product concess them are deal that the bury of

accounts was relatively easy. Besides monthly forancial reporting the system neatly handles the immuness of seven different operations. We needed the ability to do domestic consolidation and carry that into loregic consolidation, says Schleged. Because we have so many companies we have so many companies we three also of micro-impuny stansactions. Plantomic officed the ability.

Seven companies also require seven times the input, but Schlagel estimates that the company has cut down manual entry line signili-Carify. Instead of setting up the vendors and accounts.



seven times for each of the seven companess we set it up one time, and the other companies can access it

Fower to the users

Coming off the AS/400, performance degradation was a big concern. But with the Compaq ProLum server running on two limel Pennaum 90 (HHz pricessors, Kessler isn') worreed. As he puts a, "With this much power, we're

spoiling our accounting groups. In addition to the Microsoft SQL Server 4.2 database and Windows NT workstations, Nobel's network also is straitly. Windows NT "You can go wrong with Microsoft," Kossler says. "For ite pointing, the direction lor the industry.

Porning the way to Nobel's future is a new drive toward a completely automated general ledger system. Indied to a chemberole prenuma and claims processing application. "We wimade a bit of strides," says Schlaegel." and we're very-encuted about what swill alread."



University of Virginia Health Services Foundation: New treatment for an outdated system

When Ruth Clowater and the finance stall at the University of Virginias Health Services Foundation used to talk as coming tools, they were talking spreadsheets and highlighting pens

We did things the hard way. Clewater says. 'We had to run huge reports, search them and use a highlighter for the one line we needed

Clowater heads one of the Foundations two accounting departments. The accounting systems for these two depart ments must communicate with each other and also with the university's mas sive accounting system. We get a 6,000line transaction from the urityersity every month," she says "It used to be a sax inch-thick stack of paper that we had to record manually. And we could only provide information in summary form When Clowater arrived at the Foun

dation three years ago, she found an eight-year-old LAN system. The system, which started on a standalone PL. had expanded to a 200 MB dafabase running on a LAN. The system was a rashing every week, and I would spend hours restoring the database." Because the proprietary database often was corrupted. Clowater was forced to rely on-outside

Finding a new accounting system for the Foundation wasn't easy "I didn't find anothing that seemed nabe," she says I was concerned about outgrowing Beneve products, and the big systems couldn't give us what we needed. They

were also cost probabiliste?

Small price for power

Clowater strended a chent/serve seminar held nomibe by Macrosoft and Platinum Software Corporation "I had been looking at chent/server systems and Platinum seemed to be the leader." she notes "There really wasn't anything else to compare it to It had the technology and power of a much higher end system, but because it was written for Microsoft SQL Server and Windows NT I got a réally powerful solution at a relatively affordable price

Following a complete accounting overhoul, the effent/server General . Ledger system what live on July 1, 1994 Clowater credits the consultants with the smooth implementation. You have to work with someone who knows client/ server, and that's what IPC Technologies, an independent consulting firm in Richmond, VA, did for us She has high praise for

Microsoft NT and SOL Server, as well According to her, 'I get a lot of information and I can control what users have access to life also very inputive because all GUL so there's no need to know a long string of code I can sat here as my desk and control most server funcnons-wallous making a trin to the computer room With SQL Server's dump files, the

system backs up and dumps to another file, which is very easy to restore if necessary. Users can still stay in the system while I'm backing up.



tines, and it only takes about eight minutes to do a 200 MB dissibase." Bardware that helps you sleep She doesn't have to worry about hard-

ware anymore, either, with the Pentium processor-based Compan Probana "The hot-pluggable drives mean that if we have a hard drive (ashire, we won') have to tear the box apart. You sust flap open the from does, push a busion and pull the drive out. Then you stack a new one in and a rebuilds the data on its own. Eve never had to try it has we have message-control software and we can't afford downtone

I sleep at might knowing it's there." Most important, Clowater and her staff have thrown away the highlighters and are spending more time providing ana lytic reports and better service to the Foundation The 6,000-line transaction from the university is available with the click of an scon, providing financial state ment users with more detail than they

ever imagined "A system is only as good as the information you can get out of it." Clowater says, "and we're providing financial managers with the details they want, anytim they work?



consultants to repair it. By the time she converted the system, it was in danger of complete arrest



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Theix about all the different computers in your company All the different hardware, software and interioris that don't even tall to each other. Nonumagne being able to turn that betterfeld power also are underliked method that makes your whole company more competitive. A network as powerful and or appreciable that yet in the description of the company and the subject of the second and the subject of the second and the seco

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Desktop Computing

Cramming for Win 95

ome users are starting to lay the hard ware groundwork for upgrading to Micro soft Corp.'s Windows or even to other oper ating systems such as Winwafer Workgroups Por most shops, the rwhelming need

will be for more memory and disk storage space esti

mate that a majorse has only about 4M hytes of RAM on their desktops and roughly (20M bytes of bard disk

Most observers say 8M bytes of RAM as the minimum requiremeet for Windows 85. The ount of hard disk space required depends on the number eryone amin, the bank will

PCs are networked or stand-But upgrading from 4M to 8M

tes will be a time-consuming and costly affair and will cause some users to stagger their up grade costs over a period of time. Costs for upgrading from 4M to 8M bytes of RAM are roughly \$150 to \$180 ner PC

We have over 1,300 PCs, and the cost of apgrading all of them is probably not worth the trouble of moving to Windows 95," said Frank Curley, assis-

tent vice president at Astoria Federal Savings in Lake Suc-The bank recently unwarfed its desktop PC base to a standard 8M-byte RAM configuration So instead of upgrading evtional memory and storage and upgrade only those system when the time comes to migrate to Windows 95 sometime next year, Curiey said.

Astoria Federal will increase its PCs' memory expacities with standard SDMMS (RAM chips from the bank's primary ven dors. Any additional disk storage requirements imposed by Windows 86 are unlikely to have an impact because most appli cations will be migrated to not worked servers anyway, he

Brigham and Women's Hosp tal to Boston is already upgrad ing its bardware - but not for Windows 95. Instead, the hospi-

tal is switching over to Windows for Workgroups, said Jim Marra, a senior consultant in stralegic technology assessment Midlife kickers for one-half to

 Upgrading or overclocking · Upgrading motherboards

· Adding disk spare 4,500 PCs include elock-dos bling systems that have 25- and 33-MHz processors to make

"It's definitely going to be a 1996 decision," said Fred Debore, director of network services a Advanced Technology Labors tories in Bothell, Wash. The firm estimated that it will spend be tween \$300,000 and \$500,000 to upgrade roughly half of the 600 or so mainly 485-based deakto PCs in the company

memory to between 12M and 16M bytes of RAM and boosting hard disk capacity from 120M to at least 420M byt

That is a continuent shared b Roger Thibodeaux, assistant vice president of information Evalence at the Connections Ma tual Life Insurance Co. The corr RAM, page 66

Gateway opens floodgates for slew of Win 95 notebooks

By Jaikumar Vijayan

in the first of what promises to be a wave of similar announce-

ments soon. Gateway 2000. Inc. recently launched what it calls a Windows 95-optimized note-Based on the totel Corp. Pentium 75/90-MHz chip, Gateway's tures active-matrix screens, modular internal CD-ROM and Roppy drives, lithrum son batteries, a docking bar and a keyboard optimized for Microsoft Corp's Windows 96

The system, which Notebooks will ship next month starts at \$3,499 (\$3,699 with CD

ROM) and has a traveling weight of 5.6 pour It includes into grated stereo speakers, Sound hle sound, jacks

external speakers, micro spones Solo's The kryboard gives

osers shortcuts to running Windown \$5 with two additional keys - one to once

text-movific many The keyboard is similar to the Windows 95 keyboard for deak Ion PCs

This will definitely open the cycs of the corporate burne to Goteway

predicted Randal Giusto, an analyst at International Data Corp. in Praming ham, Mass

Ginzin said this type of full. fledged maltimedia notebook will not be the corporate firetbuy, nor will it be the office tool but more of an executive hay. Analysts predicted the launch of Windows 95 is also likely to trigger similar an-

cements from other notebook readors. Compag Computer Corp., for instance, just week announced its new high-end Pentium-based LTE Elite 5000 series of multi-

They will begin shipping next

Microsoft's blitzkrieg

By Stuart J. Johnston

If you were a techno-dweed who never really grow up and you are too much ice cream before falling asleep, imagine what your dreams would be like.

How about a giant Windows 95 box sailing into Sydney Har bour in Anstralia with musicisms and dancers? Cool, dude Or maybe you suddenly find yourself in

Toronto, and one day a stant letter "O" appears on the top of the city's tallest building. Then every day thereafter, as other letter mysteriously appears until the letters spell "Windows 95" on a banner 300 feet to ti

Or you dream you're a journalist in Poland being taken down beneath the oce

in a submarine "to show them what the

Or you snap on the TV in the Philip pines and see the president. Fidel Ramon receiving the first copy of Windows 95

But wait, this is no dream. These are all events Microsoft Corp. will undertake as part of its worldwide launch of Win-In fact, as Microsoft rolled out its new desictor or



ystem last week — with a huge circus event on its Redmond Wash., campus and satellite downlinks to 40 cities — the hype and hoople were intense

a in New Zealand, TV stations carried

live the sale of the first copy of Windows 95 of midnight on Aug. 94

aln Paris, a Windows 95 Car from Citreen, with logos on the side, was to pick up Microsoft Chairman Bill Gates at the Paris airport and take him to an event in the Palais des Congres alo Italy, Microsoft will distribute Wis-

dow 95 and Office 95 demo disks in railions and airports. Gates will lannch the product on

Lake Come on a boat flying the Windows 85 flag Tadk about a blitz



active-matrix screen, Windows 95 keyboard

Win 95 install: Easy, but bumps possible On-line help program addresses most questions

By Chris DeVopey

If first impressions are important, Win down 95's setup leaves a pleasant image Windows 95 successfully ushers individ nal users through the extensive installation process and provides network adnistrators with helpful tools for single or multiseat reliouts. However, jumping the gun as a user or information systems group will ground machines on silicon

soft Corp.'s Windown 96 is distributed in ary packages a CD-ROM and a set of 13 diskettes. As a bonus, a bounty of auxiliary information and programs ROM, including a tour of features, a pinball mame ers the Windows 55 Re sources Kit in the Win dows Help format and

administration took

cook us the network set

no atility Using understandable dislog b and plenty of splashy graphics. Setup comfortably shepherds users through the maze of options that install any of the optional components. Setup de-

tects most common equipment and correctly migrates most settings from old versions of Windows, However, some choices applicable to networks, such as locations of server-based maribours, can require information from in-house tech

Setup's on-line belpanswers most p tinent questions, which is critical because only three of the 120 pages in the introductory manual cover installation. Answers to the complex issues most be found in

the CD-ROM or printed energies of the Windows 95 Resource Kit, a highly recommended purchase for any Windows 95 support persola The placement of Win

doers 85 files, which can be installed overaneousry or into a new depertury is a key decision By in stalling Windows 95 into the same directory as the

old Windows, Setup mi grates alt Program Manager folders and icons into the new Star menu and Windows 95 can run the previously installed Windows applications 95 was installed into a pre-existing This strategy works best when you know Windows for Workgroup 3.11 mechine that all needed Windows 3.1 applications that supported more than 400M bytes

To create a dual-boot system, Windows 95 must be installed into a new directory The drewback is that Windows 96 ignores all pre-existing groups and application files. Old applications must be reinstalled to work with Windows RS. Unfortunately, Windows 95 doesn't re-

member settings for a computer's own shared resources. This is annoving to those whose workstation is a turni-workgroup server because such shared disk or printer resources need to be re-established manually.

time spent upgrading to Windows 95 ranges from 15 to 60 minutes and de pends mainly oo standard system per formance stems. On fast Pentium computers with active disk eaches. Windows 95 installed into a clean directory in 12 to

Installation on several 100-MHz 496DX4s took 18 to 59 minutes. A Compaq Computer Corp Conturn mstalling Wir dows 95 into a clean directory via a quick Microsoft Windows NT network com pleted its task in less than 18 minutes The longest time in the t00-MHz group (50 minutes) occurred when Wind

faster than CD-ROM because systems gain five to 15 minutes by having the Win dows 95 files expanded previously by the NetSetup program Windows 95 offers an arrenal of tools

to network administrators. The NetSetup program on the CD-ROM conveniently decompresses and copies Windows 95 to a server for installation on other systems or shared use between systems

Additionally NetSetun guides administrate into constructing scripts used by Setup to control or antomate any nr all of the in stullation options. By turning off user input, the installation of be completely antomated (except for is

suing the Setup command itself) Unfortunately, NetSetup runs only un der Windows Q5, not Windows NT as files unt be copied through NetSetup to any NT server via the network rather than any local CD-ROM. Also, a copy of the resource kit and a text editor are required to edit any installation actint

For 18 departments, doing their hon work, testing their applications and writ ing scripts will make the Windows 95 rollout quick and relatively painless.

DeVinery is a freesent reviewer, nathor and speaker on PC technology. He works in Seanle-

RAM

CONTINUED FROM PAGE 43

pany, with a fleet of around 2,500 mostly 486based PCs, has no plans to move to Windows 85 When configuration apprades like memory or disk drive upgrades are necessitated by new

applications, the company goes in for "after market opgrades, or we timp along by doing things like redirecting drives to the LAN Unless users are considering putting off the migration to Windows 95 until wall into new year, it might make more sense to upgrade now than delay much longer analysis said. The our

rent dynamic RAM availability crunch could push memory prices up in Windows 95 the pext few months. Though analysts recom

mend that users may be best served by going to their vendors for the memory and disk dross boosters, other sources include catalog vendors, reseders and third-party apgrade yea-

appliers such as Reply Corp. in San Jose. Calif., are selling apprade kits that users can plug into older systems. The firm provides comete Pentium motherboard-level upgrades for IBM ValuePoint and PS/2 systems and Compag r Curp.'s ProLines systems.

Others such as Autotime Corp. in Portland. Ore., specialize in recycling memory chips. For example, the company offers a product that reos otherwise worthless old 2M-byte chips to 4M-byte modules at prices starting at NEC brings multimedia to businesses Fills cheap PCs with features

In what analysts perceive as an early at-tempt to push more robust multimedia capaes into mainstream corporate PCs. NEC Technologies, inc. this week will announce a ne of aggressively priced business PCs.

By Jalkumar Vijayan

NEC's PowerMate systems will come with all the bells and whistles that were recently asso ciated only with the multimedia consumer mar ket. The systems will replace the company's tro-

age series as its top-of-the-lase business NEC is the first major vendor to introduce a Add-featured multimedia corporate lineup and could succeed in tapping into early cornorate interest in multimedus applications

Price lan

For users, the availability of relatively low cost corporate multimedia systems such as these - a NEC 80-MHz Protium system starts at \$1,729 - could catalyze interest in applications such as videoconferencing and enterprisewide componer training neugrams and

By implementing the newest and most recent technology when the cost is necticible NEC is demonstrating the viability of these applications" in corporate environments, said Jo seph Ferinzzo, an analyst at WorkGroup Tech

The new high and ores of NEC's P

. Pentium processor, go to 191 Mitr

· uSM bytes of RAM standard, expandable to

. 256K-byte standard second-level cache . Tull-screen, full-motion video

· 64-bit PCI graphics

P6 plans

NEC last week said it

plans is demonstrate a

PG-based weekstation at Comdes/Fsill'os, The

system, which will be aired mainly at the

compete-intensive scientific and

engineering markets will have an estimate

starting price of

· Infrared data mession . Pricing starts at \$1,795

tin Towns

samptou, N.H At least one major NEC user agreed Systems such na

these "are perhaps not going to be our base systems, bu there certainly are could use it for" such ne showing training videos and sharing voice and video clips

companywide, said David Forfis, manage er of information technology services at the etric utility department for the city of Aus-

NEC's systems are based on 75- to 133-MHz intel Corp. Pentiums and include the following . Full-motion Motion Picture Experts Group

*Peripheral Component interconnect graph-· Quad-speed CD-ROM drive and 16-bit stereo

• Infrared support a Built-in network sup

The systems will be available in 22 configu rations and provide users with a choice of Microsoft Corp.'s Windows 95 or Windows for



Yes could make robber hand hish for instance. Or larke page clap figurines. But why on earth would you want to spend more time gening has down at work? Wild, the assesser is you probably wouldn't. Not one would. So you that some people may one loanes that you can Windown NT opplications up on three thouse factors with a MHSF REC-based system. Or that you can also use MHSF REC with the NASC - And that according to the TPC-C loand marks, the map deserve OLTP systems was MHSF REC. On the which has also the proper for the you about all close change, and have you find consisting other

people. So if you find yourself in this position.

that you chose MIPS RISC because of its exceptional price/performance advantages. You might also tell them that you chose MIPS RISC because

nearly a hundred companies have adopted its architecture and it's the number

one RISC-based general purpose processor in production today.

That usually works. But if not – if after all that, they will seem unsure – just remember that you still have your assignation. Und there will always be plenty of office supplies.

more imaginative

Windows NT without

MIPS, but there are

ways of wasting time.



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Mac users get peek at products

By Lisa Picarille

At the Macworld Exposition, held earlier this month in Boston, Apple Computer, Inc. gave users a glimpse of future system software as well as developer tools available now, while third-party develop-

ers offered up a mixed bag of products. Apple showed off its work in progress on Copland, the next superation of the Mec OS, due out by the end of next year tt also offered previews of a new version

of the operating system, due out this fall. for its Newton personal digital assistant The company appounced it is now shipping OpenDoc Developer Release 3. Apple is expected to deliver the final version of OpenDoc, its object-based component architecture, this full

The Cupertino, Calif., firm also present ed products available now Apple teamed up with Digitool, Inc. to deliver an updated version of Macintosh Common Lisp Version 3.0 of the progra mming language, which runs on the older 68040 chip, now lets multiple processes run concurrently within an application.

For developers who want to create applications that exploit the newest ex tensions to the Mac OS - including the ability to make three-dimensional applientions with QuickDraw 3D - Apple released issue 4 of the Mac OS software deperkit.

For their part, Maciatosh multimedia developers can now find resources, services and belp in creating products via Apple's Multimedia Program on the World Wide Web (www.amp.apple.com). For Macintosh users who want to get on the Web, Apple has shipped its Apple Internet Access Kit. In it, Apple hundles

Netscape Communications, Inc.'s popular Web browner noftwore Apple also reaffirmed its commitment

to Unix by delivering an update of MacX. which lets Macintonh users run X Window System applications. Version t.5 of MacX supports the X standard running on a Power Macinsosh

Third-party developers also It duced a slew of products at the above grated suite of productivity software now supports the Power Macintosh.

SAS Institute, Inc. announced that a new version of its SAS System, an inte-

er card for Peripheral Component Inter connect-based PCs and Macinioshes ate has reduced by 40% the price of its Friendly/Not adapter, which offers built-in Ethernet support. Also, Linksys introduced its first Macintoch offering—

an Ethernet Workgroup Hub and T

play Labs, Inc. unveiled two 17-in. color multifrequency displays that combine portrait and landscape views in a single monitor. The monitor costs \$1,290

Macworld tests Mac OS vs. Win 95

By Lisa Picarille

Attendees at the recent Macworld Ex sition were united by their love of the

Macintosh and condems soft Corp.'s Windows or T-shirt vendors booking anti-Wir wares lined the streets leading to Boston's World Trade Center

Playing off the 1990s antidrug amercial, one T-shirt sported an Apple Computer, Inc. logo with the saying, "This is your brain." Under the Windows logo it read, "This is you brain on drugs. Other shirts offered the sentiment

don't do Windows." And reinforcing Apple's 60% share in the education market.

Inside the Trade Center, Apple did offor serious, side-by-side comparisons of Windows 95 vs. the current version of the Mac OS. Michael Mace, Apple's directo of Macintosh platform marketing, our ducted a session called "Apple Assesses the Windows 96 Challenge."The session slammed Windows 96 for touting fee

tures - such as a trash can and long file names - that the Macintosh op erating system has had for years. Joe Graziano, Apple's chief 5

nancial officer, said he expects a 20% increase in unit volume shipments for this quarter over the pre-vious quarter. Graziann also said he exets unit volumes to be up 50% for the cember quarter, compared with the for its products was Power Computer Corp. The Maxintoshelone maker's prod

ucts were everywhere at Macauchi Ry. ition despite the fact that it didn't Radius, Inc., another Macintosh com-stibles maker, said it will likely be able to deliver a system based on the Apple IBM Common Hardware Reference Plat-

form (CHRP) before even Apple or IBM can get a CHRP machine to market. But don't count on Radius' CHRP sys tem to run Copland. Apple's next generation of the Mac OS, right off the bat.
Sources close to Apple said the Cop-

uch later in the year Apple is working on a version of Sys m 7.5 that will run on CHRP in case Cop





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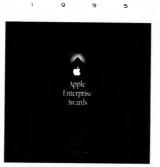
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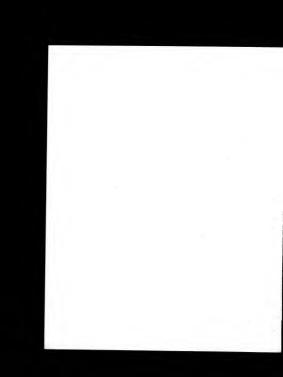
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RECOGNIZING EXCELLENCE IN ENTERPRISE SOLUTIONS



INTRODUCTORY NOTE



Creates and innovative software will never be the sole domain of commercial software vendors. Some of the most expang and unique software is being created by and for the bisiness government and education communities to meet their own unique needs.

All too often, these as lease developers and solution providers do not receive the kind of recognition their effects would care in the commercial areas. This is the primary movement behind the Apple Emergence Awards, a just effect by Apple and Computerwoold to absorance the concending curious applications development work being done on the Maximosh platform throughout the world.

Another purpose for the Apple Timesprise twanth is to clearly demonstrate the desexcit advantiges the Macration funders offer in addressing the most complex and memors requirements of computing within large organizations. Supporting this community is the logical extension of Apple's long-senting goal of increasing personal productions wherethe present rectundary.

The results of the program, as you can see from the detailed application profiles within, are remarkable. Without exception, these developers have had a major positive impact on the ability of their organizations to communicate and do business.

It was especially graphying to spend time with the contest finalists, looking at their applications and seeing how they combined their own talent and expenence with Apple technology to add significant value to their originations.

I would like to extend my shasks to those who devoted the time and energy to participating in the Awards program, and encourage all of you working with the Macintosh platform to participate in next year's program.

Michael Spindler President and CEO, Apple Computer

- were militaries a Shace co

FINALIST: 1515 Machine 2.0.1

The Space Sintenss Division of Lockherd Museles & Space Co., in Nunnyvale, Calif., is currently

The Space Sintens Division of Lockherd Museles & Space Co., in Nunnyvale, Calif., is currently

moded in the development of Space Station Alpha (both the U.S. and Russian segments)

The 1915 Nuchme is a server-based multimore relational database that automates many of the tasks associated with general ing cost data and Basic of Basimans (800) for proposed efforts. Secoral report options provide cartons selects of the 800 cost data, down to the melhodula task level. Data can be electromatelly exported man energybra-level periong systems, or to local workstances where the data can be authorized from within other applications.

The 1515 Machine provides a long-term solution to generating cost data efficiently for all proposal ciloris within SSD It also series as a data collection tool for exporting cost data into enterprise-wide new business systems. The database demonstrates that workgroup-level tools can have a significant impact on a company's productivity and consellectiveness.

Contact: Greg Chirichigno at (408) 756-400)

FINALIST: Aircraft Situation Display

NORTHWEST As Northwest Ashines' Sween Operation Control (SOC) facility, several operations groups must a 1 x 1 x 1 x 2 x 3 make and communicate critical operational decisions 24 hours a day, 865 days a year

Northwest Arthres developed Areach Stuation Display ((SD) for Maximish for its Minneapola-based SOC facility. The application gives flight dispatches a snapshot of a flight operation situation by depicting, in resistine, data critical to flight operations, such as current areach position, weather radar and significant weather information.

ASD is used primarily by dispatchers for pre-flight planning, route selection, following flights on route and alternatory destination or diversion situations. Dispatchers can customate their displays to fit their particular work responsibilities.

ASD significantly enhances the collection and interpretation of circuial information through a single instante display. The application has resolted in major cost savings, cost avoidance, operational efficiencies and, ultimately, improved safety.

Contact Bryan Bourn at (612) 727-6334

WINNER: Alex. Brown Trading System

Alex. Brown & Sons is America's olders investment banking firm, serving

Acrix Brown & Sons — individual, institutional, corporate and municipal clients from offices

throughout the U.S., Europe and Japan

Alex Brown operates the largest donestor floor trading floor outside New York Cay, processing thousands of transactions each day in this fast-paced environment, traders require an information sys-

tem that provides amely and accurate market data in a format that no easy to access and interpret.

Previously, the firm used a system that had been pecced together on multiple platforms, requiring traders to shaft between five different sorteens, each with a different look and feel. The system was fur-

ther hampered by outdated hardware and an unreliable communications backbone

In 1994, the compant moved to the Manascok, oring case of use plan the ability to integrate many servers and all the off-the-shelf programs is could use for wrings enhancement to its systems. We compared Weshows, Linux and applie entormates, and apple was the execute use. We picket Silbaugh, Administrator entanger for trading at Next. Brown & Sons and also project manager for the Next. Brown ASS. Trading Source.

The Manison-blood reseas greath polisions mader productive Through the imagazion of secral disparate marker data services reasoning drough Mazimon benderation, tradition can now view, on sections, all the elementations be need marker from your news, data, however, deep data and dispbases. By climinating the need for multiple workstations and shared divoles, workplace chance has been reliefed that the Baggest benefit in the fact themse can now kelp deep made decisions based on the most testing and an artificial section of the fact the first section of the section of the section of the fact the forms and allower.

The system employs Apple Quadra 8404% on the decktop and Quadra 650s in the computer room. On the Majoritosh operating platform, Alex Brown runs Novell, Unix, 1884 and 486 Windows-based applications as well as its own custom programs.

Winning the award has had posture results, both internally and externally, for Alex. Brown According to Silbaugh, "It has made the Macintosh more accepted within Alex. Brown, and it has given us recognition throughout Wall Serect that this is truly a dynamic trading product."

Contact Robert Silbaugh, (800) 638-2596, x 3369.

FINALIST: System 2000

The Computer Services Department of San Josephin Delta Community College, in Stockton, Calif, supports the technology for all academic and administrative computer services.

In 1999, Delta College's 13-yearedd manufame could no longer meet the demands of college administration. The challerge facing Computer Services was no create an open computing environment, improve staff productivity in application development and revision, and deliver an easy to use solution that maximized the college's computer resources on the desistop.

System 2000 is an integrated, scalable administrative system dut in designed for the Macintash disensivener envocament. System 2000 integrates functions for managing scudent information, human resources and appeted systems. The student subsetation system, which defines date or some \$1,0000 includes per represente, in the largest and most complete composition. More than 200 desknop Quadras and 27 Workgroup 86 promise stuff with the computer power for System 2000.

Contact R N Zinck at (209) 474-5300

FINALIST: UTX Image View Client, UTX NW Image Server 1.0

The University of Year in Austin is committed to sellip schoolings provide jobination to an ing volume there of the Year State of Year State

The system 'image-enables' the Software 165 software used by UT and resulted in a custom client interface between the administrative computer system and 500 MoS. The result is examines communication between Software AGs Adubts distillate management special and Most interpretation with the administrative computer system allows the unreserve to mantane one distillate of information.

Contact. Shelby Stanfield at (512) 475-7310.

WINNER: WEST (Web Educational Support Tools) 1.0



McLaughlen

PABE

and return them, with comments, to the students

Founded in 1851, University College Dublin is the largest university in feeland, with more than 15,000 undergraduate students.

The Computer Science department designed WEST (Web Educational Support Bods) as a delivery environment for transatting multimedia course materials to students over the World Wide Web on the latternet WEST also creates the potential to deliver course materials to audiences outside the unreceive

WEST also allows tuces (in the U.K. educational system, someone assigned to a group of students to monitor their progress) to provide admidual support to each student through the product's built-en messaging system. Students can submit exercises directly to tutins. Tutins can their grade the exercises.

In WEST, a Maximosh is used as the Internet server; the client can be a Maximosh, PC or Unix workstation. University Collège currently uses a Power Maximosh 8300 as a server.

The Computer Scenee department's fina prototypes of WEST were not robust enough to use. That was frustrating, according to project manager Henry McLoughlin, because "we knew exactly the type of support functionality we needed, but did not have the resources so build it on,"

But then, says McLoughlin, "two crucial things came along the Web and AppleScript. The Web gave us the perfect chere/server architecture. And AppleScript allowed us to install the functionality we wanted very quickly." From that point on, be says, the project took four months to complete.

wanted very quickly." From that point on, be says, the project took four months to complete.

WEST was designed as an in-house solution, but University College now intends to literate a to
other educational establishments—not just other colleges, but also the E-12 section according to

WEST won the Apple Enterprise Award because "Apple technology was more critical for us" than for the other finalists, theorizes McLoughlin "We could not have done our project without AppleScripe."

When WEST won, McLoughlin step, 'Needlens to say, we were extremely pleased, that it also brought somedamp attentions to us. With the Internet, it doesn't matter where you've situated. You don't have to be at III' or in Sidoon Valley. Once you're on the Internet, where you are is the center of the numers."

McLoughlin says he hopes to enhance WEST with QuickTime Conferencing, which he is currently testing. He also hopes to get top-of-the-line Power Macintonhes to use in development.

Contact: Henry McLoughlin at +353-1-706-2480

FINALIST: MacCIS



The Dartmouth-Hitchcock Medical Center (DHMC) coasses of Dartmouth Medical School. the Hachcock Clinic, Mary Hischcock Memorial Hospital, the Matthew Thornton Health Plan and Veteran Affairs Hospital When hose-based clinical information was available only through terminal displays, a group of Macintosh users requested to use their computers to present and interpret this clinical information

The response was to develop MacCIS, a cleme server system that links staff physicians, remote affiliate physicians and other clinical staff members to DHMC's custing MUMPS data repository, while providing access to the patient electronic medical record. Features include identification of patient records in other physical locations on the LAN; quick identification of documents within the record, custom graphing of lab results for custom tests, and provider scheduling, co-call lists, and patient admissions and census. MacCIS benefits all providers involved while restricting access and safeguarding patient confidentiality

Contact Stephen L. Priest at (603) 650-5886

FINALIST: Integrated Graphics Communication System (IGCS)

Northrop Grumman Corp., in Prot Rivera, Calif., designs and manufactures military and commercial awards and assemblies, missiles and unmanned aeronautical vehicles, and electronics systems

The Integrated Graphic Communications System (IGCS) is a multimedia Oracle database application that includes file cataloging, information management, job tracking, cost analysis and information routing software. The IGCS stores information such as digital photography, video, animation and audio files, as well as data, text and graphics files created in most deskoop computer applications. Graphic files can be previewed in thumbnad form for quick identification, and documents are citegorized in a document summary window

Users of IGCS include office workers responsible for creating materials; researchers and analysis who need quick access to information, and executives who must review and approve work in progress

Contact: Jeffrey Marich at (310) \$42-5160

WINNER: Control Data Advisor

©CONTROL DATA

Control Data Systems Inc. is a systems integration company that helps businesses and government institutions couple business process improvement

with reclaiming amounts on the control of the control of the company has developed a chem severe application, called Control Ditta Admics, that allows continuen in scanning above control of the control

has two parties and extracting, that recognizes an attention plat includes a statement was probled only here to the implementation of shorts, featured than distinguishments was probled only on a monthly blues, and the effortunes are locked over an properties distinguishment. Now, all project and monthly the locked of the problement of the project are electronically updated, to they can look office at cook, and directive in molitime, different cook that will come up. "These are no amound transaction through the department as proport." any Todd Hauchdide, manager of electronic workplace independent of the College Section.

Implementing Control Data Advisor has led to early identification of schedule and cost overnue enabling swift corrective actions, thus improving the quality of Control Data's project delivery.

Control Data Advisor runs on any Macanosth. The server is Unin- and Oracle-based, and the client part of the application runs on any Macintosh Classic and up.

Hauschildt believes Control Data Advisor won because "it is truly used on an emergence-wide basis it is used in 20 countries throughout the world, and it's part of our standard business system."

He adds. "It's a way to take a human interface and put it as part of a normal business system where everyone who originates the data is able to see the distraint work with it and edit it all in one place, insected of having so mark up paper and hand it to an administrance."

After winning the award, 'we've forces more credibility as an internal organization

says. The Apple technology has enabled us to apply our own messaging and electronic commerce technology to this product."

Contact: Todd Hauschildt at (612) 482-4917

FINALIST: Ternary Waste Envelope Assessment Tool





Bamelle, Paolic Northwest Laboratory (PNL) is a contract research organization in Richland, WA Much of its work is with the U.S. government, dealing with national environmental issues

The eman assumed with making and arroung relativities vectors from Industed as glass long as interpreted reproduced owner in several Bollom for the meaning of preceding on the chance in many thems on the sent westign and a sent of our recycle servant must produce a glass product with properties acceptable for safely anting these variets subrigations. This is developing as of similarity as this below his problems accepted the membelliants of these vacaus. The many Water foreign extrements Treed (TEVE) antimizant documents to complete devices the anti-order servants and creation propriets of the enabling glass means by allowing plant operation to compare different processing servants on the plant members given below of glass by products. [VIII Cold one several allited and date.]

Contact Bob Robertus at (509) 372-4918

FINALIST: Data Capture

TRILOGY In 1995, Tologo Development Group, an Austin, TX, released the first multi-vendor, multi-discributor product information and configuration system, call Conquer But to become an endustry standard

emplication for computer purchases the instruction and coefficients on system, call Conquer. But to become an enhancy standard application for computer purchases, the system must contain every component from every computer vendor in the world.

Data is difficult to collect and model—over 39% of the information on product data silvers is incorrect.

As a result, Tislings developed Data Capture, a multo user disabase that gives users an intainive pathway to modeling products. With Data Capture, non exchancil people can generate object-oriented models in seconds. Data Capture feeds all product information into Compute, so buyers can use at to customistic, comparison ship and order computer solutions.

Trilogy has used Data Capture to enter over 40,000 SKL's from more than 300 vendors and expects the number of SKL's to surpose 80,000 by wearend.

Contact: Jessica Diladlo at (512) 794-5900, ppr. 265

PAGE

WINNER- AccuSource

Bergen Brunnung Corporation health care products and advenuesses services to 12,000 pharmacos and advenuesses services to 12,000 pharmacos and hospitals across the U.S. The company provides over 60,000 products for these contenter preccipion drug and "over-the-counter" recels.

Differentiation in the nature and intensely compensive business of health care distribution can be a problem. Since each distributor provides exactly the same products, differentiation can only occur by adding value.

To provide customers with an electronic crasing containing such that caselic Peers has, here price? analysis. Depth Braumary developed a CD BIOHbased present that is calls hendowner. Before undering a product, the customer can suck-clock at in real-steer for availability. The casing also permode can sorters with digital photous of new produces and informs them of produces that are specially prised for the month in additions, product manufacturers can use the great on advertise to customers through the sex of digital involves. All over extensions.

The system is deployed on an Apple Macinsols U. 575. Although customers credit decorrectally deriveded the catalog to any comparer with a CD IOM done is a specially configured for the U. 575. The chose the U. 575 because of its design as an all-lossed platform, sups Ray Pacini, project manager. IAAD, "Platformission don't have a lot of declarage space, so to have an external CD IOM or modern or pertipheral would not be an effective use of space."

According to Pacita, the AcouSource electronic casilog won in the Apple Enterprise Inwards cargory for Communication & Collaboration because "it was the only business collaboration software application that was truly enterprise-note."

Not only is the electronic catalog in production, Pacita notes, "but it is also being used by more than 3,000 customers."

Each of those customers receives an updated CD ROM twice a month. Pacini expects the number of customers to exceed 5,000 by year-end.

Contact Ray Pacitti at (714) 385-4028

FINALIST: The Member Services System, Version 4.50

The Procedental Simusous Co. of secreta user the Newther Servens (SNS) as present monetar early an electron stream (SNS) as present monetor and documents the progression of each cell. Trusts unevoked result through 13 deliminate and dates and open latter's through 13 deliminate indicated only one latter's through 13 deliminate indicated color possibilities in revisions, and recreeces data from 11 host-based applications, using a local SQL detailuse to decipiter cryptic mandrane cooler.

here to SS, across other II maginize applications was confirmant—each on required usingse legion procedures, and different non-insurent emispation commands, and distancial receivery of customer DD markets and other data. With his enabled one-click across to see adversarian as morted during a commer originarie, eclassistic reprincia, commercial demonstration, method. "Acrossy versical" and simplified marginion forcince violation as to longer distancial by the design of lags or application, the course peops prince has been survailabled.

FINALIST: Disney "RADAR"

Walt Dissey Pixtures and Television is a producer and distributor of feature films and television executaments programs via the theatenal, broadcast, cable, home video and interactive markets.

Diacy ROAG (light, Aushbilies, Dissibation, Asalysa & Reporting is a cross-piction, client inverse application that tracks and manages all Dieses film, the insense and home who trieds for domestic and international markets. A mission-critical between and client copy system, ROAGM manages for Dieses in Monty of this, their rotated contacts and legit right, coordinates workforder destrolous and safe commences. And colorators marketing opportunities for managem professibly

ADM solved sat business problems how to manage a complex, relaunimous and growing global product like, how to enhance profitability, how to constitute legal and contensual implications, how to provide casy-to-lears, fetable access for multiple levels of meen, how to extend workshock contensity to a centrally located server, and how to offer identical extenplations access via Moceanish and Windows operating restress.

Contact Gary Kleinman at (818) 558-2310

WINNER: Naval Aviation Wide Area Network (NAVWAN)

The Naval Air Systems Command (NAVAIR) and its affiliates, including the Avanton Supply Office, provide life-cycle support for all Navy and Marine Corps arcraft and related systems that can be onerated, based and sustained at year.

A large-scale reorganization and the widening geographical dispersal of NONIR caused a fundamental change in the way it did business: A robust communications infrastructure to enable cross-plan from interoperability and access to databases, team members and customers worldwide was required.

"As you look at communications between all these groups, the cost of maintaining a team onemation was hape." was Communder Craig Luigust, director of strategic IS sechnology for the Office of the solicitant Secretary of the Nay for RAD and acquisitions." There was a cry for some way to integrate all direct people so they were looking at the same data. That was what drove the similar integration."

As a roule, NAVILI developed the Naval Assours Systems Train TEXY (NOTEIN), as exceptionscale power retwork that integrater NAVILIS 15,000 Macrosols comparers and 25,000 TeX operating as the Navilla of the Navilla of the Navilla of the Navilla of the Responsement of the recognization through the integration of old the older products, providing a migration path to emerging encounterful associated, and adopting a validate enteroul handboom.

The systems servers include both VIX and Macintosh platforms. "For senior managers, the Mac was easier to adopt to and a better fit with their logical understanding of their workspace," Laigust says.

"The Mac became the lever to bring them atto an integrated communications model."

Uses of any of its offshe shell foull propers can acres in a X-90-like NOVAR corporate directory of ore 30,000 names. They can writ and receive and to corporate seem and centeres and to and from the Internet they goeway. NOVAN were can also attach them; files to mail minesigns and listed students from within inferfact and applications (independent of platform). They can acress corporate databases and the provisions inferenced of IAN conceasia memories or memories.

Added they NAWEN won, Leagues surmone "It took on an exemptive symmes problem that deals with a basic needs people being able to clearly senseable and communisate data that decis with time of the country of the and the effectively, quality and in a method on timentee to the current emissionment that they already understood. "Winning the small," is said, may help simplify a long make making NAWEN de controls for a sational New Visions and the said, may help simplify a long make making NAWEN de controls for a sational New Visions and the said.

Contact. Commander Craig Luigart at (703) 697-3033.

PAGE

FINALIST: ClinTrak 1.0



For Medical Support Services, a Centreville, Ala., management company that provides health care management services to health providers across the U.S., tracking patient information is ontical

ClinTrak, a home health care application for visiting nurses, was developed to automate the capture of patient clinical data at the source - with the nurse in the home. Each day, the nurse links in to one of the company's satellite servers, sends patient information gathered from the previous day's visits, and retrieves the next daily schedule of visits.

On a typical day, each nurse visits up to six patients, using ClinTrak to record information such as vital signs and other clinical data: visit status, and reason for visa; medical supplies used; and mileage. Clinifink not only clininates many forms, but provides an electronic record for each patient that can be accessed remotely as well as on-site. Linked into the company's IS system, ClinTrak provides information for billing and patient tracking without the need for relaying critical patient data.

Contact Jeff Bauer at (205) 926-3700.

FINALIST: Zimmer Information Console



Zimmer, a division of Bristol Myers Squibb, designs, manufactures and distributes ontropedic implants and related equipment and supplies. With its product line (over 10,000 products) and cus tomer base both growing. Zammer needed to re-engineer its information dissemination processes

The Zimmer Information Console (ZIC) is an electronic catalog that serves as a sales force automation solution. ZIC provides detailed product information (test, video, graphics) in a mobile package. Product quotes can be generated and immediately printed or faxed via bulle in fix modern. Product features can be demonstrated through QuickTime movies

ZIC and its supporting graphic files are distributed on a CD ROM set that contains over 2,500 single- and multiple-frame QuickTime movies. Graphic files can be integrated into computer-based sales presentation applications, allowing a salesperson to customize and personalize multimedia presentations for a customer.

Contact. Tim Poyner at (219) 372-4223

WINNER: The Mortgage Market

Cennic Systems Corp has developed and deployed a decentralized distribution network site methods he metagate trading in Canada. The network allows consumers to place their menaged demand up for bidding, through an intermediaty, con a base where lenders annually recoped in competition with each other. The entire network reason as sundand EXI file and record bundle that allows the trading up take place across company boundlates.

The network provides a transaction fee based "electronic markerplace" between decentralized point of side and centralized underviening facilities on a national soid. The network allows financial product suppliers and consumers to transact hunteres electronically in a virtual business environment. Participatus can be any licensed administrat or corporation, trades can occur between any paries.

The mortgage process has become a commodity, and profit margans are enoding. The Consist solution addresses the traditional "fixed cost" branch office distribution system with its high overhead and inflictability. "We build all the technology and provide at to the industry," says David Chapman, presented.

edent of Cernick. "We don't self at su suppose," you go set a cut the mount," usey Daniel Chapmans, prodect of Cernick. "We don't self at su suppose," you go set as such most on a stammartiment for basis." Cernick Systems began putting the concept suppose have in 1988. "We stained width the Apple plan from at the outset," Chapman says. "Receive at an oriented inward point-of-side, we found the Apple plan continuence was the enter to work web, We can give it to someone the outselfmand the montput enterior and the second to the contract of the contract of the contract of the contract was the contract of the con

business and a day later they can be using it effectively in the field.

Cettric's stresses Apple technology in its network. "If someone waters to play with us, they must use an Apple platform as defined by us." Chantenan says. "It must be reproduct the handle on the

use an Apple platform as defined by us," Chapman says: "It must be precasely the Apple configuration

we sell them to have for their circumstances, because we suppost the entire network electronically."

According to Chapman, The Mortgage Market won because it defies traditional thinking. The world

notal thinking in financial institutions, he sprs, is "I will build rectacking for my institution alone, and I will see that so bear up the other gay; But this product not only gives the consumer and the independent business person a bit of influence, it's cost-effective and beneficial for the financial institution."

Chapman calls winning the award "an anountment." In the past, he says, Centric had not been part of the "assitutional fabric" in Canada. But, he adds, "Re'll do about \$2 billion (Canadian) in residential transactions this year."

Contact: David Chapman at (919) 649-2369

FINALIST: Suture Label Approval Software

FINALIST: Suture Laber Approval Software



of surgical scaplers. The company is also a leader in the field of minimally invairer surgery and a growing participant in the suture market.

Label artwork must pass stringers. Fish requirements before being applied to products. But the request and review process was too cookly in terms of time spent reviewing artwork, and review errors occurred too frequently.

Some Label approval Software (SLIS) is a document request and resump software rejectes that less multiple deparations reposet, review and approve label university before a supplied to produces. Approved another the the personal by the system to a motion prior and apply some designed for this process. SLAS speed up the review process by resulting amonto its to the appropriate and decreased review errors substantially by providing companions material and STISTIVE review of streets.

Contact: Scott Neufeld at (203) 854-5289

FINALIST: Penn Printout Online



The Office of Information System and Computing produces the University of Pennsylvania's technol oge newsletter. The World Wide Web edition of the newsletter is called Penn Printout Online

Penn Phismos Online offer: "mywhere, unyme" across to current and archared university computing information. It is acrossible from a World Wide Web home page in four formass Prif (sechen), HTML, Prodestips and ASUI. The home page also provides a hyporhiled subspect increased in the current year's HTML Bills, a feedback from and a wearchable ASUI archive gauge back to 1994. The URL is hope you'very upon cole presupportuna.

Penn Praterus Online solved the unversey's problem of distributing adormation. Although the print version was destriuted directly to faculty and staff, only through Penn Printour Online did a become leasible to potentially achieve total distribution to a changing student population of some 20,000 graduate and undergraduate students.

Contact. Edda Katz at (215) 898-1786

WINNER: Second Look Computing (Arachnid)

Scothd Look Computing is the University of lova's campus-wide resour for interactional software development research, training and support, it allows students, faculty and staff members so crear goes on the World Work We without lawing as learn HTML coding. Because it allows done to weare guases for the his developers facility.

McBurney, dobbed a funchand.

Commay Reb rigges in pure HTML is a complicated process HTML tags often do not transfare two
ally into white a paige will look like, and other are no OLE standards "Wait HTML, it's a very excess accome," way McBurney. "It's improssible in visualize how a will look with other objects on the page.

There is nothing that forces an author to were evalable HTML."

Anchold simplifies the process by removing the HTML tags from the process of Web page design. Through no drag and-drop metrics. Farched automators the process of defining a page's interaction, in "actor" mode allows a user to process a page's interactions before a seconserted in HTML Anchold only generates HTML codes when the page is converted for the Virtual.

According to McBurney, Anachmid may be the best nod for beginners designing Neb pages. This the difference between ferring them do 50% of their developments work versus pusing someone either to do so, The says "Most people who use in have had their own home page of the Benzest in one weed." Note than 15,000 people have downshould Arachmid sace it became available to ampute in March.

The TCP control panel makes the Moc a no-branner in terms of a machine for taking control of the laterner Too don't have to constantly make changes on system is allows you to take for garmed the ability to work in a real-branner convenience conceiling multimorbial file formum white maintaining your Internet connection," says McGamer, who works on an Apple Power Macrosol 6000 07.

McBurney thinks Arachted won this portion of the competition because "considering how hox the Internet is, anything that was geared as tool toward Internet had an advantage. And because Assembled is a multimedia authoring tool, I can put together a whethang demo application in no time flat."

Winning the award has been a big boost for Aeachnid "There's an unstated bias against products that aren't shrink-wrapped," McBurney says. "Winning will give Aeachnid another level of legitimacy as help people take notice of it."

Contact Robert McRurney at (519) 335-5194.

FINALIST: Knowledge On-Line Klosk

Boox-Allen & Hamilton Inc., a management and technology consulting firm in New York City, developed a multimedia kook, to allow the collection and sharing of its best thinking around the world.

The Knowledge On-Line kook is used as an internal marketing communications, awareness-building and training tool. It serves

as the landgrow of Boose-Micris campaign to lack off as Konnindige Program. Concept to global relicots took four weeks
A team of four Boose-Micri consultations with himself multimedia coposeurs used of differ-shell packages to implement the
interactive self-ground program, which was a transport forchimques, including 5-D animation, custooms and Quickliffine secret
opposities, to pain information on to use:

By generating excitement and buy in for the enter program, providing a content for users to understand the program, and delivering an easy-to-use self-training vehicle, the Knawledge On-Line Knosk has exceeded the firm's rell-out objectives

Contact Aron Dutta at (212) 551-6781.

FINALIST: LinkIT1 2 1

MacTraining or a company in St. Procedurg, Ha, that trains public school teachers to use Macintools
computers. The company teachers more than 80 Macintools-related hardware and software courses,
primarily at public schools but also inside corporations.

Liakiti corases uneractive multimeride standalones based on Heperient, bustons, cards, spece and popuja mensas kaned as casual users, hindiff in the first Messicola program that crosses Heperiens with no activities, lis filter care the exferensing, can solicit user input, or can combine both. The problege medicals are interactive ear marker, grade book program, sound recording section, coder pains can do and Quickliffice philipsked control Linds can also control under OCR, benefities and MIDE specialisms.

Linkfit has been used to test and place trainers, and to create supplemental support for hands on training. Thanness prefer, Linkfit overwhelmingly compared to Maclinating's previous method of hard copy handouss.

Contact. Ray Horsley at (813) \$28-0725.

WINNER: The Andersen Window of Knowledge System



Andersen Corporation is the largest manufacturer of wood windows and patio doors. The company, based in Bayport, Minn., provides a range of con sotent windows, door and roof window styles in standard and custom sizes.

The Andersen Window of Knowledge System was developed to support distributors and retailers in selling and quoting Anderson's growing product lines. The system, which replaces manual procedures, traditional catalogs and price books, is designed to support the sales and marketing efforts for use in Andersen's distribution system, as well as to publish product information and to simplify the process of specifying and quoting Andersen products

The system currently runs on an Applie Power Macintonia 8100 100407 and is used by virtually all of Andersen's 100 distributors and 500 retailers. A portable version is also available; this version runs on the PowerBook 540c. The portable version is also used by 100 representatives inside the Anderson sales organization

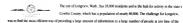
According to Robert Saxler, architect and application development leader, the Andersen Wandow of Knowledge System won in its particular application category because of "the depth of the solution. The toolbox we've distributed to our retailers not only supports the presentation of product information. but also the design and test of products

"The Anderson Window of Knowledge is not a superflucus activity," he adds. "It is an integral method of delivering and selling products, and it has allowed us to increase the number of products we offer We are now specializing products to customers' specifications, which supports the trend of mass customization."

According to Saster, winning the award in the Multimedia Kook category for business "raises can tomer awareness of Andersen Corporation as an information-sawy partner in the construction industry We're providing the information required to do business, whether that business is in the retail environ ment to sell our products or in the construction environment to have the accurate dimensional information required to install building products."

Contact: Robert Sader at (612) 430-5110.

FINALIST: Get in Touch



day or night. In the piex, saformation about the area was available only during regular business hours.

Get in Touch, an interactive muchicarren raformation looks, now provides this information 24-hours a day at four locutions. Over 1000 people now access information each month using Get in Touch.

The look's intuitive ments and tourhoreen technology allow users to select information by tapping bottons. A captivaing combination of graphics, video and sound portrays information about Longview area attractions, business and government services in a manner that is both entertaining and logical.

Contact Brenda Cooper at (360) 577-3350

FINALIST: Instant Interactive 1.0

Malameda va grama mer propiat ar 100-001. Hijl Schod. A 12 jindig shoot on the hij black and the side of the side has the finding part and unterproperation for so mentaling on sent description of their some interference control and the side of th

Contact Kim Hunt at (808) 775-0995

PENNSTATE The Penn State Alumns Association wanted to serve its members better, and

thought that more high-rech visibility would allow it to do that. So the assocution decided to create an information itsoic that could serve as an easy-to-use, up-to-date information resource about the Alarmi Association, Penn State and the local community.

The kook also helps the Alumni Association gain reibility so that it can increase membership, puticularly among recent graduates and current students. The kook employs a playful graphical interface that entertains and engages the user.

Committy there are there is looks that old the Hean State more. The there are located as the Shaaps Lorn Int in an example both, it is known conference Conter and the Fitnesh Sudern Union. Abrillong insule of the Internation are included insule democrable, which suddoned data is needed, such as the latest exactler of formats. Book can make a register to a neemed server, which removes data from the Internation Server, which removes that from the Internation Server, the Internation Server, which removes that from the Internation Server, the Internation S

The kink is built around an 8100 90AV Power Maximosh. All the video involved runs off the Power Maximosh's internal hard drive.

Eventually, there could be as many as 15 to 20 blooks, neutred on campus and around town, according to Thomas Flach, multimedia producer with the Multimedia and Emerging Technologies Group at Penn State's Center for Academic Computing.

According to Mike Halm, project manager for the Multimedia and Emerging Rechassingues Group the look won the award in its particular category because "it fit the enterprise model more. We were doing things with remote servers"

Another reason, he says, was that the knock used a lot of creativity to make it user-friendly. "We used a video guide who's something of a stand-up comic to usher people through the use of the knock."

As a result of winning the award, the Multimedia and Emerging Rechnologies Group has genered some attention on curryus. "We'll be doing some additional development on the project next year, eying to integrate Quicklime conferencing and some Quicklime Vinyail Realing," says Halm.

Contact. Mike Halm at (814) 865-2159

The type of solutions highlighted by the Apple Enterprise lowards program transform the personal computer from stanimate hardware into an integral part of the way an organization does business.

Developers rely on a rich set of tools to create such solutions. Since introducing the Macimosh, Apple has worked to guarantee that the broadest range of such tools are available for the Macintosh platform.

The state of Macintosh development has come a long way.

with Apple pioneering concepts such as object-contexed programming, visual pregramming and components observe. You see just a small sample of the current state of tools for the platform reflected in the software used to create the Enterprise Awards finalists.

The growing need for feature-inch and customs software will catalyze dramatic changes in the way software is created, updated and used. On the development side, these transitions are beings driven by

- Increased application complexity, is software applications become increasingly feature neh and complex, is becomes more difficult for developers to debug, maintain and improve them via traditional programming methods.
- Probleration of system software APIs. The growing difficulty of implementing APIs series different computer platforms is making it harder to build programs that take advantage of new system technologies.

- Multiplatform delivery. Economic pressures are forcing developers to find inexpensive ways to deploy products across multiple platforms.
- Need for more efficient programming. Because of the shortage of qualified programmers, it has become more important to maximize programmer productivity and create easy-touse tools for into-programmers.

One approach that can minimize these problems is "componentization" — the creation of industry standards that enable

software to be developed as modular, conpublic building blocks Widespread adopfion of such a sandard will make it easier for developers to create products, deliver software updates, keep up with hardware changes, and deploy content to multipleplatificems. The component standard that

platforms. The component standard that
Apple, IBM, Novell and other undustry
lenders support is Openibee, an architecture that enables modulat cross-platform component software development.

Apple continues a remed the Macanda observe activities and or "observe few statis" with developers, Apple incurred an or "observe few statis" with developers and part of the second of

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Handle with care Remote PCs part

Workflow systems must work with, not remove, legacy systems

By Tim Onellett SAN JOSE, CALIF

Workflow systems often arrive when a company restructures its business process, but in almost every case the software still has to deal

At Workflow '95, held here recently, users' experiences integrating workflow and legacy systems were a frequen topic of conversation.

If not bandled proper ix the workflow sys tems installed today become the bulky leaney systems of tomorrow, an in-

dustry watcher said. Workflow coftware emates the move ment of documents through an organiza tion and paually in volves mission criti-

represe from workflow software developer Viewstar Corp. said 95% of the systems the company installs deat with these types of legacy systems At TV Guide in Badnor, Pa., for example, workflow project leader Gregory Smith made

tipe installed inConcert workflow soft

ware from the XSoff, Inc. division of Xerox Corp. The magazine wanted a workflow system to manage the production of more than 100 oct tions of TV Guide targeted at different viewing areas across North America.

Also, the software had to rue with TV Guide's Oracle Corp. database because "we didn't wan to speed any more money on database

But while the software dealt with the technological sucs, the bumen is sues could not be overlooked. The mainframe tors at first balked

at the workflow software, saying they could manage the ociated with creating

"The ope were able to get their heads on the work flow bey wanted to put the book out Workflow systems, page 54

of DMI standard

to az svin live brab them a consi way to track and manage bardware and software for turding

The Desktop Maz face (DMI) standard has been extended to allow remote PCs as well ariocal LAN-attached desktops to provide information about their reware and software to man

rmest applications The Remote Desistop M ment interface (RDMI) allows management information to be sported between servers and geog good

remote PCs via any ch munications protocol. It was deto long

bates about the merits of com peting prote RIME

provides "a six gie way of getting DMI infor mation dress baying to worm baving separate (soft warel accets for

each аррёсь tion to run.

said Ed Arring ing chairman of the Deskton Man agement Task Porce, the industry consortium that developed DMI

and RDMI Some users we med the in proved standard. RDMI "would be very belpful in providing a means to deal with remote site problems from our centralized help deak. said Ki Wilson, a senior microcom onter analyst at Stone Contains

Corp. to Chicago With Microsoft Corp.'s Windows NT and Novell, Inc. NetWare servers installed and more than 3,000 PCs to manage in 150 locations na-tionwide, Wilson said his company is "looking at using two different management packages." Those

"It would be nice to share in mation between those two pack ages through the RDMI," he said. Another user said the standard uld help out costs. Glenn Farrel LAN systems co stone Textiles in We erio, said RDMI support couls

bave provid by climina

ing the three h with two vendors to get Token for and PCMCIA cards to work in Pentium-board PC

While analysts hailed the Prospecification, they faulted word for failing to make their PC proc ucts comply fully with DMI ster

dards. The key question is "will RDMI be snoth er opportunit for frenders! 6 discords or will it

strengthen supthe use of irt asked Jim Hor man, a vice pres ident at North east Consults

Another DMI

too little. late. Microsoft recently decided that its products won't comply ful

ly with the DMI specification. the meantime, companies like Compaq have come out with their own systems because DMI was an late," said Greg Lewis, presi of the Personal Computer Assets group in Rochester, N.Y., that procan manage technical assets

"DMI could do what's per Lowis said. But be added that aft two years of work, it is "unfo nately disintegrating into a num ber of different camps," Ver are seeking competitive advantages rather than cooperating on one standard for managing PC as pots Lewis no



TV Guide sure the magnzine's more than 50 Unix servers

Protection guaranteed

Auspex's ServerGuard has automatic failover capabilities

By Jean S. Bozman

When users work on a network, their data files may be stored locally or flung far across the dry at a remote storage site But when a local power outage bits and the servers drop off-line, users are affected and business is disrupted - regardless of where the data lives

Software

Hoping to address this problem, Auspex Systems, Inc. recently added software protection to its NS 7000 rver line designed to restore data access with

The software option, called ServerGuard, atic fallover capabilities that nnect users with alternate Network File System (NFS) file servers in case of outages. Alough the switchover can be done in less than ond, resynchronizing two servers may

take several seconds ServerGuard can also be used by sites that can't tolerate any interruption in the data access that feeds key applications such as finan

The Auspex software package, priced from wide-area petwork

\$15,000 to \$35,000, sup software protoc and local TCP/IE LANs. Appropried at a user meeting earlier

this month, it is set to abin this fall Users said they are pleased with the new

failover capabilities because they often must access petwork data from multiple to cetions NationsBank Corp., for example has offices in Cher lotte, N.C., and New York. The bank plans to link Auspex serv ers at both sites as



Get your fax straight

Inbound fax routing to computers still poses implementation snafus

By Seruchi Mohaz

Ask anyone about inbound routing and rwer is the same. The pleasure of having faxes delivered to your deak top comes at a price

That cost is taillied in both dollars ed in the difficulty of implementing the technology Unfortunately for us-ers, the situation hasn't changed over the past couple of years - a near eternity in the high-tech industry:

Outboard routing - or sending fax es from a computer over a network to a destination - has been fairly easy to implement and use. But inbound routing continues to be difficult. Three of the popular technologies for achieving it are direct inward disting dual-tone multifrequency (DTMF) and optical character recog

Apart from DID, most inbo methods are "partial and require some manual intervention," said Prter Davidson, presi-dent of Davidson Consulting in Burbank,

Think of DiD as a change (PBX) for faxes. A trunk line comes into the fax server and

is divided into never al lines; each user gets a line

This is a good solution for inbound faxing, said James Rafferty, technical editor of "Human Communications De geet," a quarterly standards newslet ter in Danbury, Cong. "Its strong point is that it is backward enmo which means it will work with any fax machine "Its weakness is the o

said. The high cost comes from soutalling phone lines and fax boards as more people are saided to the system. DID is also complex from the physi-

cal petwork standpoint, said Don Ham. ond, an information support special ist at Hewlett-Packard Co. in Loveland. Colo. "You have to understand how to configure DED with the PSX and set on the physical connection. You have to rstand line voltages as you connect DID lines to the computer room,"

Dialing for an

Direct inwert dialing: Think of DID at a PBX for fants. A trunk line comes into a fax server and is divided into lines for each user. Each trunk line is the equivalent of one fax machine.

requires the sender to enter a code after the fix number. This is hard to use because users often don't know when to enter the code.

difficult with handwritten fax cover sheets. Even pointed cover sheets are not always sooth mediable.

Still, mers evaluating fax server sology seem unclosed to go with DID. Garth Keesler, a stall consultant at intergraph Corp., a computer sysems vendor in Hunisville. Als., said he uld like "dual phone tines" - one

the phone and the other for fax, DED

CONTINUED PROMPAGE SE

Smith said, training costs have been redaced for new operators. The system pts them with a constant "to do" hat. The client/server systems spread around the company are also used more efficiently, as inConcert routes batch process work to available computer resources instead of overloading one machine

ment and maintenance costs. "I could not do all this with programmers

Workflow can also be used to link ver-

will give him both

Other methods of inbound routing. such as DTMF and OCR, area't as pop ular or reliable. DTMF, or Touch-Tope dualing, requires the sender to enter the recipient's code after the fax num ber But a lot of machines don't support the timing issues, for example, when the sender needs to enter the code

A ways to go

OCR has made some strides in hand writing recognision, but it is still less than perfect in recognizing either bandwritten or typewritten code on fax coversheets

Although she said she is excited shout inbound routing "OCR is low on our list," said Karen Dorrough, a PC analyst at Chevron information Technology Co. in San Ramon, Calif. Chevron is piloting a DID project

One development that is likely to take inbound routing to the next level is T.30 subaddressing according to

Ken Camarro, president of Co. marro Research in Pain Sield Conn The biggest impedi-

ment to LAN fax is ed. dressing Once Inch. addressing) gets go ing, it will be a very powerful thing," he

T30 subaddress-

ing is a Telecommunione Industry Association standard. It requires users to enter a code after the lax number. This

code is transmitted to the receiving device during the "handshake" downside is that the sending machine must be able to put the code into the handshake, and both devices must reeout of the box ognize T30. Currently, many machines don't do thu

TeamWare mixes workflow with groupware

Challenges Notes by offering workflow in a box'

TeamWare, a division of UK-based ICL, has added a workflow module to its suite of groupware products, something Lotus Development Corp., Microsoft Corp. and Novell, Inc. have yet to fully address in their groupware plans. By integrating workflow with groupware, a ers can let the software automatically route

their work items to other us ers instead of manually ronting everything Ware Flow at Workflow 16, a sparsely attended show held here recently. TonmWare Plow is collaborative work flow software that works with ToursWare Office groups and runs under a TeamWs

BANGOEF CALL

Messaging Server Workfi software automates the rou ing of work items through an organization and monitors the status of each item through the process

The combination of groupware and workflow differentiates TeamWare and makes it compet itive with Notes, said Bob Sakakeeny, an ana lyst at Aberdeen Group, Inc. in Boston, "It is lower cost but not low-end stuff, though it is

ennier to use than Notes. Notes is not a work Sowproduct," he noted. Notes, unlike TeamWare, requires specie programming or assistance from a consultant to develop a customized workflow system, he said. With TeamWare, users get the workflow

TeamWare Flow includes a graphical planner viewer, forms builder, document management and an application programming interface for developing custom applications. The server software runs on Microsoft's Windows NT with a SQL Server database or Sun Microsystems, Inc. Solaris 2.4 with Sybase, Inc.'s Sybase 10 detabuse. The cisent runs under Windows or Win

Sakakeeny said the modular approach al lows users to book into any document manage ment system. Previously, TeamWare Office usere had to book into workflow from an outside vendor - Staffware, Inc. in Wellesley, Maso. -

much like Notes' approach to workflow.

The software provides flexible workflow that lets users change the process quickly, accord-ing to Paul Thylor, a product manager at Santa Clara, Calif.-based TeamWare. Every process managed by TeamWare Flow bas an "owner" who decides what users have a right to alter the

TeamWare Flow is currently in beta-tests at a few selected sites and will cost \$495 per us er. The product is expected to ship by the end of

Brief

Workflow

With the workflow system installed.

Using an off-the-shelf product reduced

for the same price," Smith said, Maintenance is now only a fraction of a programmer's annual salary be easi-

tical legacy systems, such as financial

and manufacturing applications, be cause of their position at the core of many businesses, said John O'Connel president of Wellesley, Mass-based Staffware Corp

Legacy systems are usually robust and mission criteral," be said, "Workfi automation without legacy systems is

Increased demand Then there are cases where the repli

ment of computer bardware puts demands on workflow systems At Cirns Corp. Health Insur Hartford, Conn., Staffware's workflow software had to be configured to work with 10,000 older dumb terminals because the company considered the costs

of replacing them all too high. The system now handles 60,000 insurace claims a month and reroutes 15,000 special case claums that aren't handled by the regular workflow programs.



Mary Evans, Vice President, Store Operations, Bahhage's Software Stores, NeoStar Retail Co.

"In this business, change is constant. Evolving customer preferences, new software releases, changing product inventores. staying on top offit all and keeping customers informed requires immediate access to the latest information. Our information system keeps it all at our fingertips."

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are Artistry, Inc. has sta ping SA-Expert Quality, a tool for facili tating communication among depart-

ording to the Indianapolis compa nx SA-Expert Quality gives support centers a mechanism to lost track and man-

ncement requests SA-Expert Quality features aut internal notification when an assignment bas changed, antomatic customer notification by fax or electronic mail when the status of a reported defect changes, flexible reporting and query capabilities and remote entry of defects

and enhancement requests SA-Expert Quality runs on Microsoft Corp.'s Windows 3.1, IBM's OS/2 2.1 and LANs including Novell, inc's NetWare,

IBM's OS/2 LANServer and Microsoft's LANManager Pricing for SA-Expert Quality starts at \$15,000 for 10 users

Software Artistry (317) 843-1953

Scopus Technology, Inc. has introduced SalesTeam 2.0, a software package that links sales process automation with cor-

porate marketing campaigns
According to the Emeryville, Calif. company, SalesTeam 2.0 gives sales teams, marketing departments and customer service departments access to sales data. It was designed to reduce sales cycles and highlight return-oninvestment data from marketing cam-

SalesTeam 2.0 includes features for database marketing management and sales process automation. It lets users create marketing campaigns and manage sales cycles using shared databases sales information Pricing starts at \$2,875 per concurrent

user and depends on configuration Scottus Technolom (510) 597-5500

Crystal Computer Services, Inc. has unveiled Crystal Info, a worksroup deci-

According to the Vancouver, British columbia, company, Crystal Info is a workgroup information system with data access and analysis capabilities. It features a distributed processing arrangement that removes process from end-user systems and makes effi-

age customer defect reports and Crystal Info also features automati ally scheduled report/query res These results are made available to all members of the workgroup. Users can then use tools for drill-down, integrated graphing data selection, sorting and

totaline Crystal Info provides data access to a range of SQL and PC-based databases. ft

osts \$350 per seat Crustal Come ster Services (854) 691-1430

ProeMail, Inc. bas released PreeMail In ternet 40 an Internet electronic mail

igto the Boteman, Mont., com pany. FreeMail internet 4.0 can be used to set up private E-mail networks and multihop router networks. It lets user exchange internet mail with people who we addresses on any commercial internet provider. The only charges for sending and receiving messages through FreeMail's domain are normal teleph

A single copy of the product is lices to create 200 FreeMail internet "childreg "copies, which can also send and re-

ceive internet mail The product can also bypass the internot and communicate directly with other FreeMail connections. Users can send large hinary files or establish a secure

through FreeMail Internet 4.0. FreeMail Internet 4.0 is available for Microsoft Corp.'s Windows, Windows NT

and Windows 95 and the Macintosh. The product costs \$600 (496) 586-4200

Auspex

CONTINUED FROM PAGE 58

stall ServerGuard this month after the

software is beta-tested. Even when power failures don't occur ServerGuard will increase the Secibility

We can take part of the file system sace during business hours, which we could not do before said Roland Voyages, vice president of technical services at NationsRank Canital Markets, Inc. in New York. The New York site has 120G bytes of data capacity on two Auspex servers. Another benefit, he added, is that client PCs don't have to be rebooted after an outage

Jim Swanson, a vice president of information systems at CS First Boston's fixed-income trading unit in New York. said he wants to prevent server down-

time for financial traders. "It's the security of knowing that it's always going to be there," Swamson said of Serv "It's very nearly fault tolerance. The application on some other computer will not notice that the server has gone down '

Industry analysts said Auspex's sales are roughly 40% a year. Among the company's chents are Swiss Bank Corp. In Chicago, CS First Boston in New York and NASA's Johnson Space Flight Center In Auspex is benefiting from the wide

spread trend of migrating from centralized mainframe systems to networks of distributed file servers. Their strategy is generally to dri-

their product to almost fault-tolerant levels, but you don't have to pay for all the redundancy in the file system," said Joe Clabby, director of transitional tech nologies at Aherdeen Group, Inc. in

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COMMENTARY

Internet security split

Let the browser beware

Steve Moore

Sothere you were in Ricon the last log of your South American tion. You got bored one rainy day, plugged your laptop into the hotel telephone line and soon were happily clicking through one shopping malls.

You had to type nome inform tion about voorself into an on-line form before you could cruise the mail, but bey, no hig deal, right? You skimmed through information about ordering CDs because you need to replace your worn out cassettes. And you couldn't resist clicking on a link to Chrysler's Web server, where you poked around to see if there was any information about the

ultrabot Viner sports can You also wandered into an on-line newsstand where your inaccurate mouse click missed The Econ omist and brought a pernographic magazine cover to your screen. Later, you need one of those Webcrawling search engines to find information about a new - and supposedly unbreskable - freeware on cryption program in fact, you found a Microsoft Windows 95 bets version and downloaded to

lot of unexpected E-mail and small mail. The surprise mailings included Chrysler sales brochures, o for international travel packages and catalogs for pormographic CD-ROMs. You also got a stern written warning from the U.S. government about its prohibition on the export of eneryption technology

Virtual snoops age, in which cash is the enemy because it's amonous. When you plunk down a stack

which knows that it sold a pair of size

ter which information about them will be sold and resold. Entrepreparers are

For example, W3. Com in Palo Alto Calif., now offers Web server visitorLack of security is no obstacle Gary H. Anther

French hacker cracks Netscape code," cried a headline in The Wall Street Josephal recently

The San Jose Mercury News a ried the story which told how a Parach student broke the encryption protecting

a secret message. The Mercury Neses said the incident provoked "a chilling thought for com ing to do business in exherences

Now, we journalists love to dran not to say hype - but this is a bit much. Noth ing the French "backer" did should surprise

or elerm us. First the facts. Damien Doligez med 112

university computers in a "brute-force search" to find the 40-bit key needed to decode an encrypted message that had been posted on the internet as a challenge to back ers. As everyone knows, toute is France goes

to the Riviers in August, so the computers had a lot of space evoles. The encryption method attacked was RSA Data Security's RC4, which Uncle Sam has

approved for export in its 40-bit flavor. There are about (trillion perm ons of 40 hits, enoug to keep the computers busy for up to 15 days, Doliges esti maied. One can almost imagine them burnming the "Marselliaise" as they marched through the membytes. But half way through, one of the workstat ons cried, "Eureka!" (or more likely. "Zut alors!"), and the job was done. Readers of

the popular press were left with "chilling thought it is important to note that the student's method didn't discover some "master key" for RC4 but only the key used to encrypt the challenge message. Had Doligez wanted to go after other secret E-mail messages or credit-card tran actions, the battalion of computers would have had to start over for every one. Soon his count rned from the beach and given him the virtual guillotine

Encryption? No way? In the U.S., where the government's ban on the export of strong encryption obviously doesn't apply, encryption keys are much longer than 40 bits. Each additional hit double the difficulty of a brute-force attack, and so the risk in the U.S. from casual backers or even pros with superc

is, as mathematicians like to say, "vanishingly small Indeed, for some commerce-minded internauts, encry tion just isn't needed at all. For example, the internet S ety, no less, takes unencrypted credit-card numbers from its members over the 'net for conference registration. When I first saw that, I called Tony Rutkowski, execu

rector of the society and asked him if that didn't give his members "chilling thoughts." "As it turns out, not a lot of people are concerned about that," he shrugged. Retkowski said most people view the risk of secredit-oard number "in the clear" over the internet as about the same as giving it out over the telephone

rions obstacles to Internet commerce. Lack of security isn't one of them. Author is Computers; or id a senior editor, prevenue est and security

Welcome to the increasingly intrusive info of \$20 bills and walk out of a shoe stor with a new pair of Italian location as one captures any information about that transaction except the store

But in the on-line world, you can bet YOUR Ballys that most transactions that can be tracked will be tracked, af-

already offering took for monitoring and analyzing Web site usage

tracking software that monitors wish Moure, page 6

be said

IBM to gain SNA-to-NetWare gateway By Rob Wallney at are more widely used," Another analyst said the move

IBM is expected to announce shortly that it will take over devel-

opment and technical support for Novell, Inc.'s NetWare for Systems Applications Architecture (SAA) LAN-to-host gateway

Under the arrangement, Novell would continue to market NetWare for SAA. according to sources close

"IBM is in the process of oegotiating the deal, and it's 99% wrapped up," said one of the sources, who request ed anenymity: "And barring a major unforescen eve the agreement should be nally announced later

NetWare is Novell's LAN operating system; SAA is a set of common interfaces that let users easily share and shuttle informs tion among IBM mainframes, mini computers and deaktop systems. This most recent twist gives IBh a solid gateway from SNA to Net-Ware, said one analyst who re-

would make good strategic sense. There's benefits for both yes dors' enstoners " said The Nolle president of CIMI Corp., a Voor-

bees, N.J., consultancy, "IBM users will be most impressed because IBM has far more knowledge of SNA and SNA integration issues Novell users, for their part, "will be happy because the company will be able to focus their resources on products that are evangelistic and

Users want to see Novell turn its attention to other products. Novell is facing challenges to its core hasiness, what with the

rise of TCP/IP and the arrival of Windows 95," said Bill Horst, chief of the General Services Administration's Philadelphia. "IBM can do more with NetWare for SAA than Novell."

Noise said there is truth to the claim that Novell docum's have what it takes to continne developing and supporting NetWare for SAA. it's very likely that IRM can

expand the base of users for the product," he added. One source said there is some overlap between Net-Ware for SAA and IRW's Communi-

cations Manager 2, which is an OS/2-based comm uct that provides SNA gateway features and limited terminal em alstion support. IBM won't stop selling Communications Man

By virtue of its size, AT&T Corp. has created a major spinsh with its recent

dive into the pool of companies offering Internet has Whether AT&T does a belly flop re-

mains to be seen, analysts say, because the compony's announcement was short on details, and the market for Internet com nerce is still in its infancy

But AT&T has joined Microsoft Corp., IBM, MCI Corn and others as the players to watch in the emerging market of providing ways the companies to do business on the 'net

ATAT has created three husiness units: ATAT WorldNet Services will give customers dial-up and dedicated Internet access; Hosting and Transactions Services will handle secure sales transactions; and Content Services will offer tailored information.

Technical trials of the diskup arevice will begin within 60 days, and oational availability of managed internet

access is scheduled for Sept. 1. David Taylor, vice president of elecAT&T is "serious about using the Inter net as a major communications chan

But until more details emerge or

ewing and availability, the jury will remain out on whether AT&T will become

RETECAPE: Preconfigured browser

mur: Navigational tool

arry: Search agent

Access Systems: Acrobat software for viewing, navigating and printing test and images

a dominant player, he said. "It's like a land rush out there." Tay for said. But, as history tenches, "just being there first to settle the territory doesn't mean anything someone is go ing to come along and shoot you.

He said the race will be won by who agot the isstest wagoo and who's got the most horses." And that put-AT&T in an advantagroup position But John Krick, senior analyst at De tapro information Services, Inc. in Delran N.J. said the Internet is such a new arena that it is impossible to p dict who the dommant parties will be. We'll see a number of new players in the next few years becoming major forces in the industry," he said.

ATAT has an abundance of resources, but new companies will be able to compete on the basis of impossition, Krick said.

> Just a toy Taylor coutions that despite all the hype, the interpet will

> be only one channel for doing business. He explained that the loternet reaches large numbers of people but pot necessarily the right proofe demographically "For most people, the Inter-

net is a research tool and toy but not ething to do serious husiness over Everybody Units to is reductant to commst a lot of date to traveling over the Internet,"Taylor said

Before companies risk putting sen sitive information on the Internet, a service provider will have to step up with an iropoled guarantee that the

data will be sale. Taylor said Even then, many companies will want to create their own private networks for dealing with customers.

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nd to furthering the IS can The site, at http://www.lel

rs. Metablet at http://www.melanet melanet is worth a cruise. The site half to help black-owned businesse if products. It also houses reference for and

3-D banking hits the Web ing subsidiary Vica Interactive will link banks, merchants and on-line con-

Electronic come

ers and handle the back-end trans ction processing

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Visa is expected

to publish with

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soft Corp. next

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While on line

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Transaction Technology

Securi the

Call it a virtual bank branch minus th brick and mortar

That is what Vice I and Worlds, Inc. begas creating this month for Visa's

member Using Worlds' Modeling Lansoft ware, the firms

are developing a three-dimensional representation By the end of the year, on-line

be able to tap into these branches to obeck account balances or conduct interactive chats with loan officers The Floo

mkinga rell as psychase retail mes

Courtyard, as the system is called, will also allow cybershoppers to view and purchase retail merchandise over the orld Wide Web. Visa's remote bank-

restance among

"The biggest problem I have with what Visa and Microsoft are doing is that they're creating closed systems -

or The Microsoft Network " unid Bil Randle, director of marketing and strategic planning at Huntington Bancshares, Inc "I think there are a lot of banks that wer't participate in that

closed environment A Visa spokes man said the com briefed representatives of its Top 100 member banks about its virtual banking mitiative earlier this mooth. However, he declined to disclose which member banks or merchants - if any - have agreed to post a Web page on

the Electronic Courty and

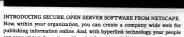
Meanwhile, banking experts are divided on whether historically cons tive banks are ready to make the lean "Banks are just getting used to the

idea of electronic commerce taking place over networks they doe't own 3-D banking iso't even in its infancy yet. It's embryone," said Mark Hardie, a technology analyst at The Tower Groop, a Wellesley, Mass,-based financial services lechnology consultancy. But Richard T. Griffith, a lormer Bank of America executive, disagreed. "The wise banks are going to dramatically overhaul their traditional deliv ery mechanisms," said Griffith, a principal at Griffith & Associates, a San

Francisco-based banking consultancy.

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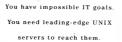
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Computer Systems









Novell unwraps developer, Aspect brings telephony home marketing assistance

With an eve toward helping developers bring NetWare 4.x applications to mar et more quickly. Novell, Inc. last week of-Scially issuached its Novell Directory Asistance program The program, which has been in a trial period for the past nine months, met with

"Users like my self don't huy strai egacs; we buy prodsets. I'm all for any initiative that will get rood applications to market faster," said Glenn Madsen, senior network manageocer at Pacific Bell's LAN Manment Center in Dubbin, Calif. Pacific

Bell has been using NotWare 4.1 since the beginning of the year The NDA program has two prongs: Novell-sponsored "developer kitchens" and cooperative marketing opportunities Both are sime at bringing a wide array of new applications that are

"aware" of NetWare Direc-22,000 software tory Services (NDS) to market faster, by cutting down NetWare 4.3. The kits on the time it taken to haild movide at the ose applications. necessary tools, AF1 The developer kitchens and sample code tre a series of two-day techneeded to build nical events held monthly at vell'a corporate beadquarters in Orem, Utah

to give independent software wendors in-depth technical expertise and oneon-one assistance from Novell englinoors weeking on NDS-aware applications, said Scott

Wells, Novell's senior manager for independent ware vendor mar Novell charges \$250 for the first person

in an organization to take the class. The price is discounted to \$150 for any additional people from the same firm who attend the course. The fee also entitles the speay to priority developer support when they call Novell's technical support

bnes. Wells said Novelt has also refined its software developers' tool kits for the NetWare 4.1 plaiform, adding more tools, apterfaces (API) and book into the source code to make applications NDS

On the marketone side Novell will work with its independent software waster partners in joint advertismg, direct mail campaigns road shows and other marketing efforts

The task of menaging users in home hased or remote offices should get a little easur, thanks to a new call managem

software package that provides telepho av espebilities to PO Aspect WinSet for Windows, intro

duced last week by Aspect Teleco cations in San Jose, Calif., also makes it simpler and faster to distribute tele phone calls from the main office to remote workers

The software essentially consol computer and telephony functions ont the PC. Users can connect via standard phone lines. Integrated Services Digital Network (ISDN) or wide-area networks In addition, the product offers realtime information on workers and calls. allowing supervisors to more easily mon

itor performance A piedge to callers Blue Cross/Blue Shield of Missouri is

Kansas City stready uses Aspect Win Set, which is installed at its subsidiers Trisource Health Care, inc. The pediatr health center more the noftware to on sure that all phone calls will be answered - even if the on-site operators are husy Using Aspect's Automatic Call Distrib utor feature, the system siphons calls to

off-site operators using a frame-relay connection running over a wide-area network. This means calls get processed more quickly and patients don't get put

Elaine Willis, telecommunicatio manager at Blue Cross/Blue Shield, said the system has wantly improved patient vice and makes it easy to track calls Trisource can now link several bealth

Moore

CONTENUED PROM PAGE 59

centers to its central call center using a single number for all calls. Willis said the contpany is considering

to a server, information accessed and the

paths taken to that information. The soft

ware even indicates which direction visi-

The firm's Personal Web Site softwa

is the first of what doubtless will be a new

tors are headed after it swing the aite

class of highly sophisticated, Web-or

A tool such as this highlights the in out conflict between marketing and pri-

vacy, which can be distilled into two qu

Aggregate statistical information

servers is of locitimate interest to Web

site designers and owners, of course But

trafficking in information about Web us

ers' personal preferences or habits is an

Before long, most of the Web resources

about how Web site visitors navigate

tions that evoke the image of the irresistible force meeting the imobject. "What do you have to hide?" vs

"Why do you want to know?

ed monstoring and marketing tools

With real estate so expensive, it just

ices sense to have some people work ing remotely rather than setting up of fices," Willis said. Aspect WinSet is based on the Tele home Application Programming Inter-

te standard, which is a specification embedding telephony control into soft ware apolications, ft works with TCP/R ides, so users are able to choose the Features of Aspect WinSet for Windows

The connection methods include the · Using two standard analog telephon

lines. One line supports a voice connec tion with Aspect's automatic call distrib utor and the user's analog telephone The second line connects the TCP/IP net work and the PC modern Data and voice connections over (SDK) *Linking an agent PC on a remote LAN

to the office LAN via a WAN connection. A separate telephone line is also needed for the voice connection Aspect WinSet is available at a base

price of \$2,700 per agent in a 16-agent configuration. Prices include the software, server, server software and a remote interface card. you look at and the paths you navignte

within them may be tracked and categ rized. That information can then be sold to the highest-bidding direct marketer hout your knowledge or consent. The U.S. Postal Service routinely sells change-of-address information to the Direct Marketing Association without the permission of postal patrons. Direct marketers no doubt will compile and sell

their own lists of E-mail addresses. Web users may look for reassurance in ome page pledges that say "Privacy assured. No surveillance of your browning will be performed, and no information er about your use of this resource will be released to any third party

But no matter how much privacy is romised, there won't be any way of telling whether anyone else knows how many times you ran that hilarious - but X-rated -- curtoon animation you found on that server in Ameterdam. Caveat browser

Moure in Comprehensorld's senior editor, sine-

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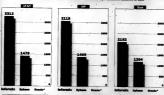
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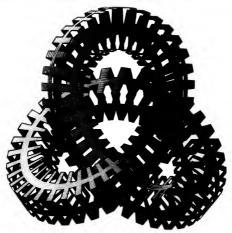
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Large Systems

IBM plans legacy bridges

MQSeries links allow access without code changes By Craur Stedman

BM is linking its newlangled MQSeries messaging moddleware with mainframe-based IMS and CICS transaction processing applications. The move is simed at making it easier for mainframe shops to close the gap separating their legacy and

chent/server avstems To do this, IBM is building bridges, which company offi-Client/server coals discussed at the Sharemigration Inc. user group conference here this mouth The bridges will let

MQSeries customers give users on other systems access to IMS or CICS applications without having to change the main frame code Today, MQSeries calls have to be built into a mainframe program before the ar-

plication can work with the modifies an

MQSeries allows pieces of distributed applications on different systems to communicute via asynchronous messages The messages are stored in queues so processing can continue while a re-Compared with the current level of turn

hetseen Militares and the reservation covironments, the promised bridge "will be like night and day You won't have to touch your legacy code," said Anthony Slusz, a sensor systems specialist at ITT Hartford Life Cos in Hartford, Conn ITT Hartford uses IMS and CICS and a looking at MQSeries as a potential com-

munications vehicle, "especially for some of our hig applications that have partly moved off the mainframe" to smaller systems, Slusz said Users on those systems need to get at the data left on the mainframe, and MQSeries with direct bridges into IMS and CICS

would provide "a real cheap and easy opportunity to do that," he added However, it will be almost a year before IRM's bridging plan starts to become a reality - and even then, only IMS will be

An IMS bridge is planned for the next release of MOSernes for MVS due in mod-1996, said Stuart Jones, a technical steat. egy planner at IBM's UK software laboratory in Hursley Park, England. The brodge will make data requests from nonmainframe users look like typical IMS in puts, he said

The bridge to CICS will take longer to fin-Out product is ted more closely to 3270 terms wal mode than is BMS. according to Jones. Mainframe CICS anpheations are di signed specifically for

3270 screen formats. whereas DfS uses a Bore message like approach that is eas: er to adapt to MQScraes

Building the bridge "requires changes in CICS as well as MOSeries," Jones said It's an obvious thing to do, but it's much more difficult " Shipment plans are un certain because the project will have to

be coordinated with IBM's ongoing developport of CKS he added As a result, the CICS plans amount to only "a good statement of direction"

that holds the potential to simplify the task of connecting MQSeries to CICS appheations, said Jerry St. Marie, manager of on-line systems solutions at Connecti-

cut Mutual Life Insurance Co. in Hartfond The bridge would provide "more flexibility on the legacy systems side," St

Asymphotopics of Not specified Routing of electron Not specified

Marse said. But he noted it "has never come up in any of the converwe've had with" IBM about MQSeries which Connecticut Mutual has adonted as its communications infrastructure for distributed computing IBM will have "to trick CICS somewhere" to make the bridge possible he year

Sally Cusack, an analyst at The Stan dish Group International, inc in Dennis Mass, said an ensier way "to have the old with the new" is important because MQSeries is being bought primarily by large corporate data processing environ ments that are brevy IMS and CICS or "It still is very much a product that is used by the big shops" because of its

complexity she said

Parallel processing wins film role The issue: Digital production studio casts Convex to provide imaging infrastructure

Striving for the ability to render value special effects at warp speed, a new German film production center has tapped a Convex Computer Corp. parallel processing system as its entertainment

By Michael Goldbern

engan The \$70 million High Tech Center Babelsberg, a government funded durital film production studio in Potsdam Germany wants to be a clobal bub for real tune rendering of animated images. It will use high-end facilities that small special effects boutiques" can't afford. saud Peter Krieg, the center's director. We're going to be like a high-grade moda Kinko's," be said

Choosy about chips

Krieg said the High Tech Center, due to be up and running this fall, will use a 64processor Convex Exemplar SPP 1000 system to provide the computing infrastructure needed for image scanning motion control and three-dimensional virtual settings. The center plans to expand its Convex system next year to include 128 RISC 7100 processors from

Hewlett-Packard Co when its new sto dies are built, Kriegsaid After a public bidding process, the Ger-

man film center perked the Convex machine because of its commitment to the HP chaps, Krueg said. He said studio officials also considered a system from Cras-Research, Inc but fenred that its use of Digital Equipment Corp's Alpha chips made for an uncertain growth path.

Los Angetes Aug. 7, the win by Richard son. Texas-based Convex shows that the entertainment industry's demands for processing power have reached levels traditionally dominated by scientists and engineers. It also ratifies Convex's recent moves to embrace a more open scalable paratici architecture, said analyst Gary Smaby at The Smaby Group in Minneapo The High Tech Cen

Announced at the Siggraph show in



on an HP 9000 workstalion to create 3-D images for The City of Lost Children, a film due out in Novemb

ter will use rendering software called Men tal Ray by Mental images Software in Ber lin. Germany Soft image, Inc., a Microsoft Corp subsidiary includes Mental Ray in its 3D Extreme and mation package The package has been used to produce spe cial effects in Holly The Mask and Cas per, according to a

Film, page 73

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IBM has announced Visualization Data Explorer 3.1, a tool for data visualization and analysis.

acommyse.

According to BM's Research Division to Yorktown Heights, N.Y., Visualization Data Explorer 3.1 lets users take data generated by models, simulations, experiments and commercial applications

and convert it into two- or three-dimen

and the Explorer 2.1 supports a wide range of Unix platforms, including parpears of Unix platforms, including parpears of the Control of the Control of the processors (SMF) models from IBM, Sus-Microsystems, the and Silicon Graphics, loc. (SGI). It is available on IBM's RISC Systems (500, RSS 9000 SF2 and selected models from SGI, Digital Explorated Corp., llewlett-Fackard Co., Sen and Data General Corp.

Pricing for uniprocessor node locked licenses starts at \$5,900. Pricing for the SMP version starts at \$0,400. • IBM

(914) 945-3882

Andyne Computing Ltd. has rolled out
QQL Decision Support System 3.3.2, an
ad hoc query and reporting tool for relational data sources.

According to the Kingston, Ontario,
company, QQL Decision Support System

d 3.3.2 lets nontechnical mere query and eroport on information in relational databases. OQL Decision Support System 3.2 zinctudes a feature that automatically resolves interdependent calculations, a time-based governor that protects database systems from overly long queries and a scripting facility that helos surfoand a scripting facility that helos surfo-

mate routine tasks.

Pricing for GQL Decision Support System 3.3.2 starts at \$496 per user copy.

Andame Computing

(613) 545-4355

Crunel, Inc. has introduced RAIDworks 1000, a RAID subsystem.

According to the Columbus, Ohio, cogpany. RAIDworks 1000 provides 3G to 20Gbytes of magnetic storage. Happears as a single SCSI disk drive to the host computer.

Computer.

RAIDworks 1000 uses integrated drive electronics (IDE) drive technology, which eliminates the estep time of SNE-based RAID systems. If features a RAID strip ing algorithm that is designed into an integrated circuit chip for the RAID courtreller. The system also includes a battery-backed cáche buffer and a load-sharine power supply.

RAIDweries 1000 has a cable free disk drive design, with the IDE drives in frame-based carriers that connect to the hardware controller through a siot con-

RAIDworks 1000 is available in fiveand 10-drive models. The 10-drive model is available only as an external box. Pricing for the five-drive model starts at \$5,616. Pricing for the 10-drive, 6.8G-byte model start at \$8,274 and at \$12,614 for the 13G-byte model.

► Cranel (614) 431-8900

NetSoft has introduced the NS/Elite Folders Bundle, a product for IBM AS/400

connectivity.
According to 'the Irvine, Calif., company, the NS-Eiller Polders Bundle is a Microsoft Corp. Windows 3:1-based communications software package. It combines \$250 display and printer emutation, file transfer and native Windows access to the AS-900 Shared Polders treative.

The product offers multiseasion displag, an icon tool bar with senichic fonts and color attributes, SQL-based data download and data transfer upload. It mecorporates the NetSod Footner, a router for Windows-to-AS-400 counterbirty. The single-user price of NeXEIIn Folders Buildle is \$205. AS-400 processor-

hased licenses are also available.

NetSoft
(714) 253 topon

Product short

Lysis Corp. has introduced BM AS/40X servers support to its Shared Information System 2100, artificial intiligence soft-wave used for technical support holds which are support to the sup

In 1995, the average IS Organization will spend 48%* of their

budget on staff.

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There is the ord Company Security and

Unix alters IS picture Data General for Kodak Malaysia

SCALALUMPUS, MAGAZISTA

n retrospect, Eastman Kodak Co.'s decision to go with Unix as its worldwide standard was perhaps the easiest part of the company's mi gration to open systems. Because here in Ma-laysis at least, getting there from the company's crop of proprietary systems was no trivial

Toward the end of last year, it became clea to Kodak's information systems groups arous the world that their IBM System 36s could not sustain the company's projected business

growth, so Kodak elected to standardize on IBM's Unix-based RS-9200 "From that moment of deciding on the RISC machine, our next objective was to move our applications, originally based on the develop-ment tool RPO, onto the new platform," said smawar Mohd Yosof 18 manages at Kodak

Malaysia. To move all the applications, Yusof needed to find a means of running the RPG-based applications on Unix. Her team evaluated two inter-

face translators and settled on Uniball For the following five months, "all we did was rustomize all our applications to run on the RS/6000," Yusof said. "The migration is totally transparent to users, as they still see the same

Problems abounded during the switch. First,

ing. Next, some programs corrupted in translation, and someone had to he assigned to har carry those programs from Kodak's Asia Pacific headquarters in Japan, Yusof said.

Yusof said other Kodak IS staffers in the Asia Pacific region are working with vendors such as Oracle Corp. to develop new financial and ties systems for the RS/6000. "Three pack

sales are to provide us with better int al-time applications," she said. The company's selection of the RS/0000 on a coridwide basis has also given rise to abun-

fant opportunities to streamline operations Por starters, the IS team at the corporate lev el has designed the Kodak Network, which al lows Malaysia 13 staffers to sign on to any of Kodak's RS/9000 machines in the region. As a result, the Malaysia IS team can tap into, say the Australia information technology group to

ask for its Unix expertise The company has also installed a le-"File transfer is very much improved," Yusol said. "Previously, when we needed to send a file down to our Singapore office, we would have to have the file copied onto a diskette and then dispatched by courier Now, however, we just have to dial up to Singapore and have it sent within

screen and mostly use the same commands as Word writes for Computerworld Majasseta

server exploits new architecture Technology trades speed for bandwidth

By Neal Weinberg

In its new high-end server, Date General Corp. is using an emerging architecture called NUMA, or a-Uniform Memory Access, to break through barriers that have

(SMP)

ced its Aviion AV 10000, a ma an analyst at International Date Corp. is Framingham, Mass. chine based on the NUMA archi tecture that scales to

Analysts say NUMA could gain in popularity as vendors try to

Bretzmann said univer have experimented with NUMA

NUMA creates a di

more slowh

(ween "near memory access" and

"far memory access," such the

data that resides farther awa

sponse time, NUM

guins 'more band

width on the bus."

said Jay Bre

from the processor is retri

but the architecture has not ye broken threash to commercia

once the industry moves toward con

protems come out Bretzmann said DG is putting itself "at the

Film

CONTINUED FROM PAGE 65

Krieg said the High Tech Center would use high-speed Asynchropous Transfer Mode technology to transmit video and sound images to cli ents at remote sites The center, which won't produce its own

of its early étients to come from North America. Its first slated project this full is rendering the 3-D backdrops for Dark Zone, a four-part science fiction series for German and Canadian While Krieg said the High Toch Center ex-

pects the Warner Bros. studios to be a client, other smaller special effects makers said they were impressed with the Convex processing power but skeptical of the German-based model. They expressed concern over the cost of remote transmissions, the compatibility of their imaging software with the High Tech Center's

and a loss of control over production. "It's not just the computing power, it's get-ting the massive amounts of data there and hack," said Bob Curley, a computer scientist at Rhythm & Hues Studies in Los Angeles.

by parallel processing systems, which would require an entire soft

Everyone is faced with the issue of bow to coordinate more procossors to tackle big jobs," such as data warehousing or data mining. said Jonathan Eunice, an analyst at Duminata in Nashua, N. N.

"Everyone can do four to eight processors; most car do 12 to 16," he said Thereafter it gets

Short time arder and harder. That is because un The Aviism specie is. der the standard SMS hased on the Mororob configuration of Uni on chin, which Dave form Measory Access (UMA), all processors are required to pro

vide equal access to data stored in memory In other words, "every time a CPU needs data, no matter what CPU or where the data is, it takes the same amount of time to get it.

But se the p increase, there is so much traffic over the buses that bottle necks oc-What NUMA does is integrate a rtion of memory onto the nev

Eupice said.

In the first quarter of 1996, DG in

expected to come out with what Eunice calls a "commodity super computer," an SMP machine bas on Intel Corp.'s P6 chip packages 224 boards using the NUMA arch

Ray Duck rector of Sabre Travel Information Network Worth, Texas uses DG's 16-proos

sor servers in the res ervation systems be designs for travel he is looking forward to the 32-processor

dity and power. "When I get a really big contamer, it's going to come in really handy," he said However, not all users need that much firepower. Kevin Reilly, information systems administrato

at Richardson Electronics, Inc. in LaPox, III., has two Avison \$600 machines, each with four processors He said he has plenty of upg room on the 0500 before he has to

CLIENT? SERVER?

HOW DO I CHOOSE THE RIGHT TOOL?

Axiant

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Choose the tool that gives you choicee.

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decision support users demand. Plus support for transaction-intensive applications you can deploy on client or server.

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COCNOS.

Visual Basic shifts focus

Improved, added enterprise features challenge Delphi

By Christopher Lindquist By now you've no doubt heard the talk about how much faster Borland International, Inc.'s Deiphi in than Microsoft Corp.'s Visual Basic 3.0. Perhaps you've even discovered this truth for yourself. Then along comes Visual Basic 4.0 Enter-

prise Edition, which may prove that the prothat compiles and runs fastest still may not win the corporate race. surface, and thal benefits those thousands of



Visual Basic 4.0 Enterprise Edition now supports 32-bit enving Windows NT3.5 and Windows 96

cost obvious (asproadvantage - to Visual Basis 4 ft Parprise Edition is that it supports 32-bit environments, including Mi crosoff's Windows NT 3.5 and Win-Visual Basic 4.0 pow includes emp

port for Windows 55 controls, such as Image List, Status Bar and Plug & Play Control. Delphi does not have such support nor will it until Bornd's next release due this fail. Visual Basic 4.0 also includes support for creating 16-bit applications for use under Windows 3.1, which pro-

Next? Object tools for Web WebObjects taps into corporate database

WebObjects adds a Hypertext Markup Language presentation layer atop object-oriented application

a World Wide Web users can also access non-object dat such as information stored in relational databases, via WebObjects' interface with Next's year-old Enterprise

Programs built with WebObjects can talk to OLE objects through Next's Distributed OLE for Windows.

By Kim S. Nash

I anyone can evangeli object-oriented develop ment for cyberspace, it's Jobs chief executive

officer at Next Computer, Inc., re-country announced WebObjects, a tool set for building applications

for the World Wide Web. The object-oriented tool cuts and tion development time by five to 10 times compared with existing ol/servertools, Jobs elaimed This has not been proved, however, as WebObiects has yet to en-

for beta testing at any information systems shops. Testing is stated to start immediately. John said, with general availables eduled for the first quarter of

Multiple on-ramps With WebObjects, users can nations that, for exam-

pic, add a Web-readable Hypertext Markup Language layer or top of corporate data or applica-

That means end users can socess legacy data or in-use appli-cations via browsers from Netscape Communications Corp., Spygiass, Inc. or others, said John Landwhere, a product manwhere, a product man ager at Next in Redwood City.

es wouldn't have to rerate, manual opdates tion at Web sites, not-

ed Richard Shaffer, editor of "ComputerLetter," a New Yorkbased prevalence That capability in WebObjects

and similar tools due from Parc-Place-Digitalk, Inc. "is a concep-tual loap." Shaffer said. For security, WebObjects also supports the Secure Sockets Layer and Secure Hypertext Transport Protocol

Next outlined other key cape bilities of WebObjects at the show

"If what they say is true, and I have no reason to doubt it, this is a killer set of tools," said Mike Adelson, director of appl development at Chrysler Finan

cial Corn in Littleton III High on Adelson's list of "real! cool" WebObject features is the

ability for developers to built Web appli estions that can a corporate data stored in ret tional databases, he said. He saw an early version of WebOb onstrated two weeks Leaste deen

ago at the Object World confer ence in San Francisco (see story at left) Yet Next is not slone - not by a long shot. Oracle Corp. in Red-

wood Shores, Calif., also plans to ship a suite of Web development tools in the same time frame rel-quarter 1996. Mountain View, Calif-based Netscape also plane to lawarh devalo

C++ standard binds rivals

By Filtraheth Heighton FANFRANCISCS

A recently finalized standard for C++ may bolster develop oriented program

ers' confidence in the object Object tools Rival firms, in-

cluding Borland international, inc., Syn Corp. and Hewlett-Packard Co. are already rallying around the draft standard, with promines to release compatible products by early next year. The come nice would not release details

about those products Developers agreed that a star dard for C++ - the dominant object-oriented programming

language, according to Inter national Data Corp. - will protect their investment in applications developed with the "From a personal point of

view it's good to know that your skills will be portable. And from a professional point of view, it's good to know that code you develop is portable to different ensoftware designer al Atlantis problem has been that C++ Scientific Systems, Inc. in Ottaclass libraries - pre-existing wa. Leir said be plans to use C++ to develop image process ing systems and has decided to

work with the langrange in part because of the stan dardization effort's

The draft C++ standard, a oint effort of the American National Standards In itute and

zation, is now frozen and available will be formally nablished

next year

C++ below to ad-

dress some of the

velocers have cho

sen not to work

with the language,

compatibility of

C++ implements

rent vendors

building blocks of code - other don't work with all C++ develesent environs Another myth C++ b ope to dispel in that the language is too complex for most sonale developers to tackie.

dd Bjarne Stro t Laboratories follow and ual developer of the ex ous to the C language that evolved into C++ choose to use C++

for the less com plex task of as aembling software ets or to tackle the more icult work of affy building

C++ has been criticized for not forcing developers to write strict-

AUGUST 28, 1995 COMPRITERWORLD

Object tools for Win 95 emerge

SANFRANCISCO

The first Windows 95 object-oriented development packages were on view at Ob-ject World, held here two weeks ago. In some cases, the Windows 95 prod-

ucts represent the object-oriented tool makers' first forays into the deakton PC reironment. They include Cadre Tech-stories, Inc.'s Object Team for OMT and liero Fòcus, Inc.'s Visual Object Cobol 1.0 for Windows 95.

But what sets these tools, as well as Franz, Inc.'s Allegro CL 3.0 for Windows, apart from their predecessors is that they take advantage of the new operating system to deliver a more visual development environment, observers said.

An early user of Visual Object Cobol 1.0 for Windows 95 praised the extent to ch it integrates tool features with the look and feel of the operating system es tool features with the

integrated into the development environnt, said Steve Rabin, chief technologist at American Software, Inc. in Edgartown, Mass, "It's also got very good support for multithreading and OLE omation," Rabin sided, making it easier to develop applications that take

advantage of these Windows 56 features. Users of the Cobel tool from Palo Alto Calif-based Micro Pocus said they are pleased with the native Win32 class library for graphical user interface ob-

jects, which is needed to build user interfaces that conform to Windows St. Cadre, in Providence, R.I., bas also built "a nice object browser" into the Windows 95 user interface with its Object

Team for OMT tool, according to a customer who requested agonymity. Users can access the entire development repository and browse it in many ways The Cadre product is the company's

ment implementing the Object Modeling Technique (OMT) methodology, which is sequired when it bought Dutch software firm Westmount Technologies Corp. ear her this year. OMT is the most popular of ject-oriented methodology, with 32% of the market, according to Gartner Groon. Inc in Stamford, Conn.

Cedre's product can generate code in C++, Ada, Smalltalk, embedded SQL and the fourth-systemation language mand by Informix Software, Inc.'s NewEra tool Cadre is also working on extending the code generation to PowerScript, used in

Powersoft Corp.'s PowerStuilden Mounwhile, Franz, in Berkeley, Calif. showed off its visual development tool for Windows 95, Allegro CL 3.0 for Windows. Because it is based on the ANSI-stap dard Common Lisp Object System, it is the first dynamic object-oriented programming tool for Windows 85, France maintains. Dynamic languages allow developers to make changes to an applica tion after it has been deployed without

Briefs

Speedwere Corporation is an international organization with shousends of setisfied customers and products with a proven track record

Application Development

Texas Instruments, Inc. has introduced Arranger, a smite of development

According to the Plano, Texas, company, Arranger lets users rapidly assemble and reuse business objects. It gives users immediate access to enterprise applications and data through OLE-based desktop applications.

Arranger is available in Standard and Professional editions. The Standard edution gives users tools to customize applications. It includes the Arranger Cata log, which maintains an inventory of business objects made available to the desktop user The Professional edition

was designed for information systems developers to enroll business objects into the Arranger Catalog Pricing is based on the number of de-

veloper and user seats. Pricing starts at \$495 for the Standard edition and \$2,495 for the Professional edition

➤ Texas Instruments (214) 575-2000

Segue Software, Inc. has introduced QA Partner 3.0, a software te sting tool. According to the Newton, Mass., com peny, QA Partner 3.0 is a broad, integral ed multiplatform testing product for QA

a three-tiered development model, an in-

tegrated version control and configura-

tion management system and the open-

@Fully 22 bit with

et for sé- on

ingof Visual Basicas an OLE

object that can be controlled

by other applications such

as computer-aided software

Microsoft's three-tiered

development model was de-

signed to alleviate the bot-

tlenecks some developers

have cocountered with Vi

engineering (CASE) tools.

users. It provides automated testing in an object-oriented architecture that can reuse the same test script across multiple platforms QA Partner 3.0 includes at Automated

Testframe Creation feature for unattended testing and recovery. This enables the creation of small modular test cases, each with the capability to be independent of the other. When an application being tested crushes, the recovery

system records the error, restarts the test and continues integrated test analysis and reporting features are available.

Pricing for single-user, single-platform icenses starts at \$2.995. Seque Software

(617) 969-3771 System Software Associates, Inc. has

introduced Object Development Workbench, a set of application development According to the Chicago company. Ob-

duction of a middleman, the Rusiness Services layer. This layer was designed to manage user requests for data and buffer those users from having to directly access the

> The User Services portion of the application becomes an interface to the Pomineus Services layer So when business rules change, only the Business Services portion of the application perds to be updated, rather than hundreds or possibly thou sands of individual river workstations. Of course this requires that the devel

opers actually adhere to Misoft's model to achieve the benefit Visual Basic 4.0 Enterprise Edition also comes complete with Microsoft's

ject Development Workbench cons the following Object Definition Pacifity (ODF), a specification layer in which all business objects are defined. Object Repository a repository for the business obpeets; Gen/C++ for Windows, a generation layer that generates platformspecific code from the objects repository;

and a deployment layer. Based on the husiness objects stored in Object Repository, Gen/C++ for Windows generates executable object-ori-

ented code for a Microsoft Corp. Windows 3.1 or Windows 95 environment. Each of the three component products - ODF, Object Repository and Gen/C++

for Windows - is priced at \$2,500 per Sustem Suff scare Associates

(312) 258-6006

gement system. This goes a step beyond Borland's Delphi by actually including the tools necessary to manage code used by multiple developers for multiple projects

The opening of Visual Basic as no OLE object gives Microsoft a chance to co third-party developers, such as CASE tool makers, to ose Visual Saxie O common use for this openness may be for developers to create their own version of Microsoft's "Wizards" to belp other developers create applications according to corporate standards

Pinally, it just wouldn't be a Microsof product if it didn't include all the extracat a price lower than the competition \$999 compared with \$1,999 for Delphi's Client Server edition.

Landquist is technical editor at Electronic Entertainment and a regular contributor to Com-SourceSale version control and configu-

Visual Rasie

CONTINUED FROM PAGE 75

might not be running Microsoft's latest and greatest yet. However, the ability to run uoder Microsoft's newest operating system may pale when compared with the host of enterprise development features found in Visual Basic 4.9. Microsoft has apparently paid close attention to the concerns of corporate developers who need to build and manage scalable, enterprisewide applications. While products such as Visust Basie 3.0 and Delphi contain everything a developer might need for small projects, things could quickly speral out of control as the number of users and de-

velopers grows icrosoft has addressed this scalabil.

sual Basic when building eli ent/server applications for a large number of users. In the model, applications

are divided into User Services. B Services and Data Services. In effect, oothing has changed from the traditional ity challenge in several ways, including client/server model except for the intro-



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Dr. James H. Goodnight President, SAS Institute Inc.

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2

Business Intelligence our veheard all the buzzoords.

(EX, ISS, O.4.R. Intelligent (buzz, Visualization) But what do they all mem?

As a collection of incinqualite portacts, they could mean trouble. But together
and fully integrated into a comprehensive decision support environment, they
could mean making good lossiness serve out of neuros of zee data. We provide them

all. And we can design just the right mix for you.

Technical and Analytical Tools Of course, decision in agis in of unique to the basiness side. If you have quality issues on the shap floor or to analyze the results of your market research, we can deliser the industry's richest so look for handling virtually any analytical need.

Applications Development was need to build decision making into customized systems to get a Jp. 60 the competition, count on applications development tools deally suited for devision support. Count on ours. Our iterative approach to rapid applications development can shave months off of your development cycles, and get the right information into the hands of your devision makes in faster.

ess Solutions Maybe you're not ready to tackle that system alone. You you're not ready to tackle that system alone. You you're have to. Our professional services staff can help you as much for as fillel as you require. We can train you, as it beside you, or build complete decision-based applications to your specific requirements.

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IN EUROPE AND JAPAN, managers must find ways to flatten their companies without mass layoffs. They've yet to uncover a surefire way.



wo words describe British information systems man ager Rene Carayot armed and unwilling. "As an IT manager, I've been given a loaded gun. Business seems to be fixated on downstrang," he says.

But Carayol, a technical director at London-based IPC Magazines, doesn't want to shoot. He'd rather retrain his staff.

Carayol has pienty of company, particularly on his side of the Atlantic. In Europe, after a decade of widespread staff reductions, many companies are shying away from layoffs. They have found that regulations make downsizing an expensive and time-consuming process In Italy and other countries, including Japan (see story, page 82), executives four mass layoffs will stigmatize their companies.

Now when overseas firms tighten their belts, they

focus on retraining and novel organizational feats to stay competitive without alashing their ranks. Howare they doing? The ideas look promising, and some programs have saved jobs. But as in the U.S. alternatives to mass firings remain difficult to find for

Downstring, page 82

EXPLORING TELECOMMUTING RELOCATING EMPLOYEES

Continued from page 5)

JAPAN

Saving the salaryman

t, in reality, it is a

es. Halter three buy it at an a

dry's

Inac

"It is much more

than in the U.S. That

is hard to understand

colleagues in the U.S."

an-Paul Loup, vice presid

Europe, Middle East and Africa division

man resources, IEM's

by some [of my]

this nath

y've got to go on a strict d in if they want

audens in Tokyo

SEEDING STARTLUM

An alternative to layoffs is the practice of seeding employee-or government-owned firms Digital Equipment Corp's plan to reduce its workforce by 20,000 employees worldwide announced last summer, led to strikes and picketing at some European sites. Last October the company's German subsidiary decided to spin off one third of its workforce into a seq-

arate, employee-owned company, saving 1,500 jobs. The new company, called Direc Informationstechnologie GmhH & Co KG, will be partly financed by Digital. And Digital will ensure the salaries of the employees during the first

year A similar solution was found at Alcatel SEL, the telecommunications giant's Germ branch. Alcatel saved jobs by making arrangements with municipal governments to take over some production facilities and employees and convert the plants into high-tech cen ters. In Mannheim, Germany, for example, 300 to 600 of the company's 570 positions will be saved, said Josehim Klein, a spokesman for Alcatel

RETRAINING

Retraining is popular with labor unxoos, lawmakers and IS professional In Germany, union officials and an IS association called the Network of Computer Science Professionals issued a first-ever joint declaration in April demanding training for IS Last September, the European Union assued a directive to ensure that comp

the impact of any corporate strategies that affect head count. The directive included resing or job placement schemes. But while many praise retraining as a way to gain loyalty and improve employee effi

ciency, it isn't a panaces. After downsizing in the early 1990s, Baxter Health Care has found computer training is not necessarily a substitute for the experience lost. The company has retrained some nor specialist employees such as those working in administrative positions, but results have

er is only a tool. If the person has no idea how to use it, then [retraining] The comp eso't belp, "says Alberto Rivas, supervisor of IS operations at Baxter Europe in Valencia, Spain, a enhaldiary of the U.S. health care flee.

EXPLORING TELECOM MUTING

Consultants and IS vendors consider telecommuting (known as teleworking in Europe) a promising way to retain skilled workers sometime in the future "I don't see any real experimentation yet," said Glanni Marchetti, secretary general of UILM, an lyren, italy-based expensive [to lay of unson that represents workers at Italian computer weador ing C. Olivetti & Co. "It will be years before we see any bene personnel] in Europe

fits from ideas like teleworking Cost is an obstacle, even though Integrated Services Dig ital Network lines are reasonably priced in Europe. Other managers calculate it would initially cost about \$6,250 per person to equip each teleworker, according to Renato Can arotto, director of corporate human resources develop

ment, recruitment and training at UILM. Managers also have a hard time envisioning how to or nize telework for administrators. Still, Casarotto save be expects teleworking will reduce office infrastructure route and travel time and is convinced telecommuting will take

off in three to five years CREATING NEW JOBS THROUGH TECHNOLOGY

Some European managers make the argument that while information technology makes nome jobs obsolete, it also spurs job growth in new areas. For employees and employees alike, the process is one of taking a step backward in order to take one or two forward. Affiance & Lescester Building Society, a newly merged \$14 hillion company in Leicester, England, has had to lay off personnel with overlapping responsibilities in the past two

years. However, new telemarketing jobs were created after the company installed software years, increase, the three three templore calls for televades employees.

"You could say that while information technology has not helped us avoid layoffs in some areas, it has helped create a new market and employment in others," says Alan Jackson bend of resource management for the group information services unit at the company.

But even if new jobs are created, there's no guarantee that the IS personnel who create bese systems will remain with the same employee Car rental agency Europear recently installed a computer system that will make its res

tion system identical in each of its European offices. The system didn't result in layoffs but Europear outsourced most of its IS operations and personnel to Perot Systems Corp., aid Malcolm Stirling, sechnical director at Europear in Villepunte, France In abort, while start-ups have saved some jobs, U.S. IS managers hoping to find ways to downsize won't find many solutions overseas. Still, the efforts of foreign managers bear watching. If European managers don't find a magic bullet soon, the pressures of global

empetition will tear Europe's social safety net more than most Europeans can bear ritten by IDG News correspondents, Marc Perranti and Cara Cunningham in Paris, Elizabeth de Bony in Brussels, Ron Condon in London and Torsten Busse in

FRANCE

Laying off is hard to do

Reducing head count in Europe is a long, cost oos, Just ask less at IBM Fra

by a web of European Un we intended to blunt the ef-

laws intended to blunt the ef-lects of employee reduction measures. These rules make layoffs a burden for employers. "It is much more expensive [to lay off] in Europe than in the U.S.," easy Jean-Paul Loup, vice president of human resources at IBM's Europe, Middle East and Africa division, based in and by some (of my) colagues in the U.S." For example, the French gov

ernment and anions are in-volved every time an employee leaves a company, even volun-tarily. And because French workers sign hinding employat contracts, the process s even longer when workers agree with a company's re-

gineeringpinn. BHM France in October 1983 proposed a cost-cetting plan that involved laying off 3,000 ekers. Pollowing negotiations — during which the plan was modified to key off only 1,700 employees and reduce all malaries by 7% — the plaz was proved in November 1994 by workers, with the support of

But two of IBM France's five ions disagreed with the plan d negotiations moved to the servoom. Early this year, the pany won, and its plan was

At one point, IEM France sked workers if they would ee to serving 1,300 jobs by ing a pay cut. While 95% red, 5% didn't. Because no

en at IBM France can't - Mare Ferranti and Cara am, IDG news corre-



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Settling Cracks



By Paul Korzeniowski

Problems can show up in a move to client/server financials, but you will reap benefits in the long run

> he Seattle Times decided a few years ago to bite the bullet: It would cap its mainframe expenses by moving applications needing major modifications to a citent/server platform

"We know the transition to the new software would be painful," says Laurie Stanton, finance accounting manager at the newspaper. But last year, the company was able to hold its mainframe costs in ebeck, Stanton adds.

In making its decision, the newspaper focused on easy-to-measure costs such as the price of PCs and Unix workstations compared with mainframes, Stanton series.

That hip of thinking may be typical. Interviews with corporate managers into the present comfortable with relatively cursory tooks at hidden expenses such as training. Thus, with maintrance costs in the millions of dollars and the combination of PCs and servers priord at about \$100,000, the decision to move to discriptively can be a no-brainer.

Consequently, droves of companies are making or planning moves to client/server systems, and financial systems are among the first applications altered. Clere Gillar, an analysi at international Data Cope, in Framingham, Mass., Projects that worldwide sales of client/server financial systems will grow Projects that worldwide sales of client/server financial systems will grow Projects that worldwide sales of client/server financial

But the corporate stampeds and promise of savings don't leasen the initial transition quakes or eliminate flaws in what may prove to be a generally successful strategy.

Walneck, Inc., an automobile components manufacturer in Springville. Utah, paid the price in terms of training when it awatehed from The Ask Group, Inc.; Mamman system running on a Berelet-Packard Co. IFF 3000 mancomputer to a Unix platform and Ornele Corp.; a Grade Pinancials. Walterk hired Goar full-time consultants, and a team of 25 employees

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"Problems arose because our users did not understand client/server software and the consultants did not know how our business operated," says Greg Crandall, Valtock's director of marketing and information systems. "The change created a great

Fruits of the labor The good news is that Valteck was able to cost-justify its \$5 million in-

First, Valteck was able to measure its return on investment by revenue per employee. When the company beeach employee generated \$118,000 in revenue. The number has risen to \$130,000 per person and the 1998 goal of \$140,000 per employee is in sight. Company officials say employees are more productive because of the num-

ber of tasks the system autor Second, the company's inventory

duced errors and enabled tasks to be completed more quickly. The compasystem included many manual my expects to out its accounts receiv

The corporate stampede and

promise of savings don't lessen the initial transition quakes or eliminate flaws in what may prove to be a generally successful strategy.

its inventory more efficiently. climinated manual input, which re-

functions, so the company manages days. This will allow Valteck to reduce the amount of interest it pays on its Also, the accounts receivable area bills and collect more bank interest on

Client/server based financials wer also a nice fit for PRC Corp. in McLean, Va. The \$1 billion systems in tegrator decided in the fall of 1902 to replace its host-based Dun & Brad street Software financials package with a chent/server system. Kelvis Goon, a vice president and general manager at PRC, save the mainframe tion per year to maintain and required a team of 50 employees who were responsible for enhancing the

At the end of last year, PRC re placed the mainframe system with financial and buman resources soft ware from PeopleSoft, Inc. By making the switch. PRC cut its annual con puter maintenance cost to \$250,000 and its support staff to 25. Good says he expects the company to recoup its \$10 million investment in less than four years. The extra 25 program

Settling cracks, page 90

Client/server sampler

The following are leading client/server applications, identified with the assistance of several industry analysts Summary comments are from Jeff Comport, a research director at Gartner Group, Inc. in Stamford, Conn.

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Settling cracks

CONTINUED FROM PAGE 89

rs were assigned to other Amoro Canada Corp. in Calgary, berta, moved from an internally developed financial system to main-frame-based D&B Software's financisis in 1901. The oil company took steps to reduce its mainframe costs two years later, about the time D&B Software unveiled its SmartStream suite of client/server applications. So Amoco Canada signed up as a beta-test

empany expects to save \$2 millice to \$3 million per year by off-leadme, says Zuhair Shiar, manager of financial and administrative systems. A second, softer benefit is easier quer access to data; SmartStream include out-and-click features so that meet can more readily examine financial

The flexibility found in a client/serv or Be aprial system attracted interna tional Shiphoiding Corp. in New Or leans. Historically, the company's 100 users relied on timeshared access to

into workflow

an IBM 3090 mainframe, Sheila Dean. ctor of internal auditing at the shipbuilder, says the mainframe didn't work easily with LANs, made it difficult for users to share information and carried bigh maintenance costs

So international Shipboiding moved to an HP Series 9000 system and replaced its customer financial system with Lawson Software, Inc.'s Lawson Software. Dean says the system includes preparkaged reports so end users don't have to spend time designing

Technical limitations

sides the commitment to significan training companies found technical tations with client/server systems. the test totalogue view that the Lawren system didn't offer more client/server expabilities. She says the tage supports only radimentary Windows features and that most of the

Many applications currently marketed under elient/server labels still Mass rely on char-

Those vendors have added client server capabilities, but the prog has been minimal With many of the systems, the server does the bulk of the processing, and the cheut merely sents information to a over

PRC selected PeopleSoft financials use they were designed from the ground up as a client/server system Because PeopleSoft did not have to migrate its features from a characterbased system, we thought the company offered better GUI capabilities than other products," Goon says. Users report improvements in other

systems. Shiar says SmartStream's client/server capabilities have inproved with each release. The package is now powerful enough to support more complex processing, he says As vendors deliver more improve ments to their products, the decision to move to client/server will become even more of a no-besider. Kortemounks is a freelance writer in Mulder

Tech notes

wish.1

year ago, a Computerworld staff member who had deat with a hords of client/server software companies observed that "about 300" was the standard vendors gave when asked how many userailes they had to really there beyonds water cody a recupie depart a liver

Today, firms selling client/server financial cations respond to that question by say ing "about 30" or "about 100." Maybe they don't exapperate as much as their overlaces sors in the client/servertools, human resources and manufacturing markets. In stead, those offering financial packages are more likely to boast. "We don't have the most sites, but we do have the best technol ogy." (Substitute "complex installations" of "biggest sites" for "best technology" if you

Take a close look at the "about 30" and "about 100" figures, and you'll likely find that at least half of those user companies. have implemented only a couple of modules. of the financial package. They still run host/terminal versions of the vendor's soft ware, or they have installed the client /server

software at a fraction of their locations These vendors aren't lying. Like other Pol lyannas, they are optimistic, Answay, nobody can really prove them wrong because this technology really is new, it will be a white be-

If IS managers want to move into the world of client/server financial software. They have to travel through Missouri first. Take a "Show Me State" attitude not only by testing the client/server application with your own data and business rules, but by conducting your own interviews with purdomers in environ

form the vendors shake out

The lead story in this Guide provides evidence that there are benefits to be had in a move to client/server financials -- one of the more crucial application sectors in previous poretion. However, the accompanying Buy ers' Satisfaction



base, product performance varies greatly So sten onto this lead ing edge with care.

occasing is done on the server.

acter-based

sin/rame or midrange Financial tools slide

Driving force



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By Scott McCready and Judy Hodges

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Sure, you might get lucky. On the other hand, you've got a lot to lose. That's why, when purchasing software, you'd better know exactly what you're getting into.

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Users find benefits but yearn for value

server financial applications. The installation bases may be small compared with mainstream products such as servers and network operation systems, and many users still aren't in full pro-However, first reports from the field show that the client/server financial suites offered by four of the major

husiness applications vendors are generally performing

Computerworld and First Market Research in Austin. Texas, contacted 33 users of Oracle Corp.'s Financials

well and providing users with benefits

By Kevin

Stream Financials and located 15 users running PropieSoft, Inc.'s Pinancials and SAP America, Inc.'s R/3 More than half (57%) of all users interviewed said the overall performance of their chosen package was better than average, and only seven users said performance

was poor in addition, more than 80% of the respondents said their goals of improving information flow and man-agement decision-making were achieved as a direct result of their chosen application. rden is Computerwoods's senior resourcier, Firing Line Sovercard

Rounding out the field

Overall performance Number of users Oracle's Financials		Very poo	Poor	Fair	Good	Very good	
		0	2	4	21		
D&B Software's S	martStream	2	2	14	11	1	
Reliability	Compati	Ibility N	falue for the dollar	Security	6.	nnort	

Users have yet to recover

their lavestment in the Ora-

ele and D&B Software prod-

ucts. Users said the impor-

tance of value returned for

the dollar is very high. Un-

spoke with few users of el-

Reliability

Given the consequences of a failing financial system, it's no surprisé users rated reliability as most important.

The number of Oracle users who said reliability was good or very good was more than double the number of D&B Software users offering those same ratings - a trend that carries through . this Scorecard. However, many of the D&B Software users who rated Smarttresm as average noted

that they didn't experience problems. How could D&B Software better its reliability? Several users said security could be improved. 'Better security would be the difference between good reliability and completely worry-free reli-

ability," one D&B Software

DECT SAYS.

Compatibility

Network and operating sys tem compatibility is at the forefront of users' concerns Users of both DAB Software and Oracle applications said the products worked well with Unix and Microsoft

Windows NT operating systems. But setting them up for the network was difficult. "It works like a gem under Unix," one Oracle user run ning the URLEY flower com-But when asked about net-

work compatibility the ever added, "Setting it up for Net-Ware was confusing - we pended a lot of bein

Similar comments by users of both packages indicate network problems were often caused by lack of eyes-

rience with the architecture. Although the number of Oracle users giving favorable scores was more than double the D&B Software users in both these categories D&B Software didn't receive negative marks on compati

ther package that could give value a favorable rating. the large overall investment and the long wait before any return in seen. Other comments on on Both applications' inade-

quacies in moving older data to the new system, "Manually transferring data over has made this avery expensive

project," one D&B Software SCAR THEE EDITOR'S NOTE: The Oracle users were in-

terviewed prior to the company's recent in-

Security

Users frequently cited security as an area in which syndors should direct much of their future attention While this criticism was made by assers of both nack-

ages, D&B Software users said it a little louder Oracle users were loss critical. More than twothirds of the respondents

gave its security favorable ratings. Comments included "extremely secure and very managrable" and "[user] access rights are easy to

Users of both the DAI Software and Oracle pack agres complained about problems with front-ended

ting tools. "Incorrect date can be entered if not care ful," one Oracle neer says.

"We've never had prob leans with data integrity or unauthorized access," says one D&B Software user, not ing, "it's the editing and so iracy controls that peed

Support

Users of almost any prodnet will say vendor support can always be better. These nears are no different, but they kept their complaints to e minimam

terized Ors Users chare cle support with comments such as "very knowledge-

able and experienced support team" and "they answer our questions imme distely if we tell them the se

verity of our problem. Comments from D&B Soft ware users included "They respond and follow up very quickly" and "they areextremely fast problem only.

However, on-site support is where both vendors stand to improve, users say Preusers searded favorable grades for this support level. but those that did said onsite support was most belpful during implementation After that, "it becomes too expensive to keep up.

	Good	Very good								
Oracle	12	15	With national and send of the	8 2	30	-	•	12	•	Telephone 50 6
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In Depth

Will **Win 95** kill **OS/2**?



R.I.P., OS/2. Your window of opportu If you're an CG/2 supporter, don't kid yourself. It's over. Windows 95 will nuke the OS/2 operating system in the busine

Any pragmatic, knowledgrable, self-respecting business defining its future computing requirements today will probably choose Windows 95. Businesses know where Microsoft is beaded because it has a strategic plan. These companies will not choose a product such as OS/2, which was developed by a company with a history of crisis management and no strategic plan When Version 1.0 of OS/2 debuted in the late 'S0s, the user com

munity, along with IBM, hoped it would be a standard operating system that would replace Unix for PCs. It was unfortunate, of course, that this early version of OS/2 lacked drivers and application software. But surely IBM would correct these limitations As luck would have it, it was about this time that IBM and Micro

soft parted company in an effort to beat Microsoft's Windows NT to market, IBM issueched Version 2.0 of OS/2 rather hurriedly — again. with bare-bones drivers and application software and without Yest, page 98

OFF AT ISSUE: IBM says it is

Sound

committed to OS/2

for the long term and has taken

action to prove it.

But many in the industry remain

skeptical of OS/2's ability to be

successful in the market against

Windows 95.



orts of OS/2's death at the hands of Win 86 have been greatly Microsoft can spend its bajillions on promotion, and it will doubt

iesa sell millions of copies of Win 95. But there are more than 6 miltion OS/2 installations out there, including nearly every automated teller machine, sirline ticketing system, police car computer and all 904 Manda dealers in this country.

That doesn't sound like a product that's on its way out, esq considering the widely publicized problems in Win 96's beta test ing. It is said to have compatibility problems, for instance, with products such as Borland's C++ or dBase and Lotus' CC Mad. Not to mention that Win 85 is purported to deliver 32-bit pre-emp-tive multitasking when, in fact, it does not pre-empt old 16-bit Win-

dows and IOS applications. These can still hang or crush your on tire system and cause lost data and network connections.

Manda has a number of 16-bit applications that run in their own

memory space under OS'2, so if they crash or hang, they do not affect other applications While other organizations may have been waiting anxiously for

Net, page 95 Annia is vice president of IS at Irvine, Calif -based Manda Motor of America, th marketing distribution and dealer franchising arm of Mapale Corp in the U.S.

Stephens is advanced sejentific systems coordinates for the Space Science Laboratory at NASA's Marshall Space Flight Conter in Huntaville, Ala, in the late 1960s, he champtoned the use of OS/2 in scientific computing

YES!

CONTINUED FROM PAGE 92

bitter Windo on NT. on the other hand, featured a graphical use prisce and drivers and software for ost popular Windows applications. In the spring of 1963 in Boca Raton Pla., a group of high-end users - my

self included - communicated these various crises to IBM. At the very least we wanted interoperability with the igger IBM RS/6000 systems

M's response was "not to worry" The company assured me it was work-ing on these problems and that 08/2 Warp would answer many of my com-plaints. Well, Warp does have a Windown 3. I omulator that lets me use Windows 3.1 applications, but I am still

waiting for AIX interoperability It was around this time, in 1994, that I started looking for IBM's long-term strategic plan for OS/2. How does IRM plan to address Win 32 applications, for tance, and will OS/2 ever run on IBM's PowerPC? To date, IBM has given me no definitive response.

This summer I began to wonder — was IBM's takeover of Lotus part of its crisis management response to OS/2's ap-plication problems? Was IRM afraid Lotus was going to stop supporting 08/2 applications? At the beginning of this th, at his annual session with industry analysts, IBM Chairman Louis stner did not seem to know what the future of OS/2 deakton competing

Windows is a different story in July 1992, at the launch of Windows NT in San Francisco, Microsoft laid out the long-term strategic plan it had been working on since the Inte '80s for Cairo its dream operating system.

In that initial strategic plan. Microsoft showed Windows 95 as a migration path in its plans to reach Cairo. The company promised drivers, application software and interoperability. And

that is just what we've been getting. In fairness, OS/2 Warp offers speed. ess and functionality similar to Windows 95. If only we (and most of the rest of the beamone world) didn't peed a variety of applications to choose from and a system that can work with other platforms. If only IBM had some idea. where it was going with OS/2 other than

down the tuber But let's face facts. OS/2 is a standalone operating system. Call it a family of one. An application written for OS/2 will not run on IBM's bigger AIX operating system. This means a business has no way to use its OS/2 hardware and software if it needs to upgrade to

more powerful syst Add scalability in the other missing opents of OS/2 -- interoperability and a strategic growth plan - and what do you get? A dying, dying, dend rating system that its chairman does not sure

Windows 95 on the other hand, as an integral part of the Windows family, in a planned low-end migration to Cairo Windows 95 uses basically the same application programming interfaces as Windows NT Therefore, applica-

tions such as Office 4.3 for Windows 3.1 or Office 95 for Windows 95 rua equally ellog Windows 95 or Windows NT 3 St thout modification - that's what I'm now doing

Some high-end mers with lenury dware actually prefer using Winws 96 over NT because they can use eiroid hardware drivers. Other users



had some idea where it was going with OS/2 other than down the tubes." J. Briscoe Stephens

may need the security of Windows NT because of the sens itive data some low end users deal with. No problem with a Windows environment - you can mix and mateb. It doesn't take a rocket sei entist to see that secong and matching optimizes your ability to extend the life of legacy bardware and still use state of the art hardware to address future needs and requirements Mrx and match with OS/2? Hab! Stra-

tegic plan? I challenge you to find on From the trade literature, it is obviout that the majority of third-party software developers see Windows as the future. Hence, popular commercial software applications will be dearloped as Windows 32 applications. The only major software developer to side with OS/2 has been Lotus, and just when it seemed to be questioning the sense of that, Lotus was taken captive. For most asers. Windows 95 is more gain with less pain then OS/2. Windows 95 means more productivity in the of-

fice and more fun at home IBM has had five years to establish OS/2 as the operating system of choice. Well, the prognosis is in. OS/2, you're dead.

NOI

CONTINUED DOM PACE OF

the late Assess release of Win St. we at Mazda have been enjoying the stratege advantage of using OS/2 for more

OS/2 rups on all 1,800 PCs in Manda's U.S. dealerships. In addition to sun porting all critical elements of the deal ers' hustness with the company, including vehicle orders, parts orders, war

"OS/2 is certainly secure . . . against an unproven neophyte like

Mike Anzis renty claims and repair info OS/2 supports a sophisticated imag based electronic parts catalog And in June, we rolled out OS/2 Warn

Win 95."

on our field sales force's 190 is peope One lest for Win 95 will be whether real 32-bs applications are developed for it over the next year or so. And will be whether it provides true plugand-play multimedia expability which is a thrust for Monda in the fo ture. Those are features 082 and 082 Warp already have.

Serversuccess

A masor point for our consider is that OS/2, bundled with LAN Server 40, has been particularly successful as a server platform — with more than 800,000 server installation IBM Chairman Louis Gerstner acknowledged cartier this month that OSTE focus pas on corporate users and enterprise systems. He also noted at the same time that the deaktop market for OS/2 continues to grow

Clearly, Win 95 as goared for the desktop and, perhaps, even for the intehen tabletop. HPFS, the OS/2 file system, can support functions such as transaction processing or a corporate data base. We won't know until it's out whether the Win 95 file system will support anything more than belencing your home checkbook

If you're going to compare systems at an enterprise server or networking lev el, then Windows NT is more compara ble to OS/2 than Wm 95 is. If Windows NT isn't killing OS/2 today, then Win 96 has no chance

It is estimated that there are morthan 300,000 server installations for NT today And recently, Microsoft announced that the delivery date for Cairo, its object-oriented upgrade to NT, has slipped from 1996 to 1997. So how these two will stock up

against each other remains to be seen

Cost prohibitive A significant advantage for Manda in using OS ? has been its easy fit with on IBM SNA environment. Let's face it. much of the corporate computing world is dominated by IRM mainframe centric architectures such as ours Managers have to look at the soletion costs of converting to Win 95. The training costs alone of converting asers from OS/2 to Win 95 are estimated at several hundred dollars per user.

I want to be able to seamlessly back no my entire OS/2 LAN server DASD farm to the mainframe or install a sinste security system (such as IRM's RACF) across my entire architecture that allows "single log-on" control In such a case, noncompatible options such as Windows or Windows 95 seem very unattractive

Some surrougt that IBM idealf will but OS/2. Everything IBM has said and done indicates otherwise. The compe ny has come out with developer application programming interfaces to cauthe porting of Windows applications to OS/2. It is courting top Windows developers to help them bring their applications to OS/9

Some industry pundits suggest that IBM's acquisition of Letus bodes itt for OS/2. However, there is at least one thing Bill Gates and Gersther have agreed on in public statements. Notes is an application, not an operating sys tem. Don't forget that Lotus has been the largest developer for OS/2, and IRM is not about to disrupt that. Don't for get, too, that IBM claims there are more otes installations on OS/2 than on any other pleaform

The fact of the matter is OSP ain't broke, and there are lots of corporations such as Mazda that continue to rely on st. According to a recent survey from consulting firm Meta Group, Inc. OS/2 nowhas a 35% penetration rate in nking industry and 25% penetration in the insurance industry

Of course Wie 95 will not kill OS/2 OS/2 addresses so much more, parties larly as a server platform, than Win 95 was ever designed to address.

Yes, Win 95 may take over the des and the kitchen tabletop, but OS/2 is so cure is our corporate savironment and others against an unproven neophyte

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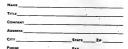
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Computer Careers

Catch the Wave: Surf's Up for IS Contracting

emand for information systems contractors is swelling, driven by the ever-cresting wave of client/server application migration and development. The opportunities are gnarly, you might say. "It's their market," says Joan Berenato, director of recruiting at Devon

Consulting in Wayne, Pa., a regional consulting firm. "We can't find enough people for positions, and that's nationwide. At this point, just about everyone is benefiting from the glut of work. For example, at The Registry, an 8-year-old consulting firm in Newton, Mass., sales for its fiscal 1995, which just ended, were \$95 million — an Increase of 58% over last year. "Picking out the hottest specialty, or even region, is really hard because demand is up across the board," says

Michael Foley, regional recruiting manager for the Northeast. So how can you cash in as an independent or subcontractor? Experts tell us what's in demand and where.

Hot positions

Hot regions

mand is strongest in the North east and Southeast. In those two areas in particular, we're seeing a cone of demand for legacy skills id, not as surprising, skills in newer ologies. In other regions, the demand seems to be for one or the

-Tany Vickers, preside

"We opened our first office in the San Francisco Bay area just a few months ago, and it has been one of the frestest. growing offices in our company's his-

- Michael Foley, regional recruiting man

ager. Northeast, The Registry: 22 off employ 1, 200 contract

We're seeing more and more demand for HP-UX systems administrators, at least in this particular area. Also, the Sun Solaris Unix operating system merket is heating up."

Joan Serenato, director of recruiting Devon Consulting: has 200 contractors

Hot industries

tions and financial services/banking are the busiest sectors to target. Certain regions are noted for their cond tration of companies in a single indus try. The South New Jersey/Pennsyl vania region, for example, has a high concentration of pharmaceutical firms; the San Francisco area has sof ware developers and hardware manu facturers; Southern Celifornia has de fense and aerospace, the East has telecommunications. Tinancial services and publishing.

Where the wave will peak next

e hottest area for contractors in the next few years will be security becau of the internet, Security in departmental systems is pretty lax, but when we start making financial transactions a

"We're expecting Windows 95 to ge

erate strong demand from clients who need help evaluating the merits of migrating and to assist with the actual migration. We're planning to hire nepeople for a new service we're design-

- Tony Vickers, Computer People

Advice from those who have been there

Have your first client already lined up in you hang out your shingle."

- Rev Revote 1000

"If you're just starting out, ask recruiters in your area who their major clients are and try to get a historical sense of what clients have been looking for What have they done in the past, where are they now, and what's coming? Good recruiters will track this so then can accumulate the experience they ed on board in a proactive, timely

- Joan Berenato, Devon Consulting

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Metuchen, N.J. "They [also] have to assess th cost of customizing the various packages they Pensione"

All companies wrestle with these issues to varying degrees. For some such as Diamond Shameock Inc. a San Antonio-based refiner and marketer of petroloum products, the decision making process can be protracted and densely detailed.

and in the rough Last year, Diamond Shanrock spent months evaluating 25 yeardows and sub-

gave the nod to Lawson.

jecting the financial applications of four candidates (Dun & Bradstreet Software SAP America, Inc. Oracle Corp. and Lawson Software) to more than 300 tech nical and business criteria. It finally

"There wasn't much difference between the four puckages in terms of num ber crunching but Lawson came out ahead for its architectural desum and cost of implementation," save Churk Oakes, manager of client/server computing and network technology at Diamond Shamrock. The Fortune 200 company ught Lawson's full suite of enterprise applications - financials, human resources, distribution and materials man-

Onkes says Lawron's solution met Diamond Shamrock's need for an integral ed package that would allow the company to re-engineer business processes. blend the financial applications into its

over time and ever users more control of their stediostions 'At no stage did we consider looking for a 'best of breed' for each business area," Oakes says We didn't want to

have to write and support interfaces for those applica Diamond Shan rock also wanted to avoid a complex im-

plementation, "Usinclasson we see able to stagger the implementation of the financials, some thing we couldn't do with other vendors

products." Oakes says. The cost of implementing Lawson software was modest compared with projected costs for other applications Implementation costs can range any where from three to 15 times the amount you pay for the software and requir

bringing in a horde of consultants. The promise of a low-cost, extremely fast implementation of financial, cost accounting and asset management client survey colleges drow The Septile Times to SAP America's R/3

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tabase, service and support from ICS/Deloitte Touche. Microsoft Corn tools and Novell, Inc. networking "Our goal was to

package off the shelf, not have to customize it or hire others to do it, and be able to integrate the package with our other business systems," says Laurie Stanton, an infor mation systems and but at the news paper. "SAP offered us a complete package that was very attractive financially

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man, a programmer/analyst Pillard advises companies to look beyond immediate needs. "Many compa-nies so into client/server with their blind

ers on and don't think about how this or that application will fit into their overall systems environment five years down theroad," he says. Mehling is a freelance writer in San Anselmo.

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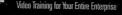
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The next big (or small) thing

While investors in the big computer companies have been reaping millions from Wall Street's most recent love affair with technology, they aren't the only more actions.

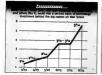
with technology, they aren't the only game in town. Smaller, more growth-oriented technology stocks may be the sext prize for investors, according to one stock market watcher. Rick Chethab, an analyst at VSR Finnecial Services in San Jone, Calif., came to that conclusion after he tracked

the ratio of the Russell 2000 annull stocks index with the Russell 2000 large stock undex.

The ratio has been moving up steadily since bottoming out in July. Chethab said, meaning "the movement is in the smaller stocks, or else the high stocks are decreasing." One stock he singled out is Zyead Corp. (ZCAD), a Fremant.

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"It is the most over-hyped product in the histo

ry of the industry. When people look back, they

will see all hoopla created for an aperating system. This is tike spending \$200 million to pro-

mote the design of a new carburetor

- Philippe Kahn, chaire of Starfish Software and der of Borland Inte al, Inc., both in Scotts siley, Calif.

Party is over

CONTINUED FROM COVER +

of next year

Delotte & Touche has already in

stalled Windows 95 on 1,000 PCs said

Gary Tiesenga, manager of network ser-

vices at the company's data center in

Nashville, By Jan. 1. Tiesenen sand, he

sims to have another 5 500 to 6 500 ma-

chines migrated. He hopes to move the

entire firm of 16,500 users over by the end

'People keep asking us how soon they

can have it," Tiesenga said. Delotte is

taking a highly planned, careful ap-

proach, complete with training classes

that will begin next month. But other

than buying new 32-bit utilities, because

many 16-bit ntilities will not work with

to 33-hit applications until at least next

One company on Microsoft's list may

A spokeswoman for Siemens Corp.

said that while the company has undeed

June, be added [CW, Aug. 21].

be there by mistake.

ows 95, the company will not move



- Michael Mace, director of Macintosh plat keling at Apple Computer, Inc.

dows 95, "there is no immediate decision to implement it " The current plan is to "wait for the next release," the spokeswoman said But because Siemens has 30 different highly decentralized operating compa nies in the U.S., "you may have somebody out there that's said 'sure' [to early deployment]," she said. Additionally there is no such company as Siemens. Inc.," which is how the company appears

on Microsoff's list, she added Also on the shelves

Beside the cavalende of new application from third-party developers shipping last week. Microsoft also announced in mediate retail availability of Office 95 and Plus Pack, which features several advanced oblitties and Macrosoft's fater net Explorer

The launch marks the first time a sig nificant number of new applications that use the system's features shipped simultaneously with the system, Indeed, applications that took specific advantage of Windows 3.0 and 3.1 lagged months behind both of those systems' release This is the first operating system where, well in ad vance of the product shipping. [independent software yesdorf investment shifted over to developing for the new product instead of the old Gates said Of course, Windows

95 was at least eight months late in chipping, so some cynies might say the developers had extra Regardless, cause Office domi-

nates the applicaproductivity suite category with more than 80% market share and the indi

dominate positioned to feed users' bunner for

the major doors to its The Microsoft Network or applications categories, Microsoft is well line service Thursday reducts to run under Windows 86.

Microsoft also officially opened the Microsoft San page A1.

"Think of it tike the rollout of a new soda from Coke. [Windows 95 is] like New Coke - sort of - Chris Le Tocq, president of SoftTracks, a market re-search company in Los Altos, Calif.

"I don't have any comment on this. I'm on va-- Mitch Kaper, founder of the Electronic Freedom

Windows 95 trivia

Number of new products at issuech Size of advertising hudget - about \$200 mill Number of new products at issuech - 300

- ▶ Number of retail notices -20,000 Number of beta testers - 50.00 Number of years worked on -
- Number of OEMs bundling it In about 250 Number of companies showing new prod
- Number of Windows 86 preview participants 1 ► Number of lines of code - 11 mill
- ► Number of diskettes 15 Number of person-years to develop - 293 Number of months officially late - About 8 ▶ Number of cups of coffee consumed -2.5 million

(thirtis Seattle afterall) Source: Microsoft Corp.

Microsoft bullied show organizers IBM exec's keynote on and off again

Microsoft Corp. appears to be using a variety of strong arm tactics to keep everyone from computer retailers to hetp

desk personnel to trade show organizers in line Two weeks ago, IBM accused Microsoft of threatening to pull its sponsorship of the Windows Solutions Conference & Exposition in September and rescind its permission to use the name "Windows" in the conference title if Lee Reiswag. IBM's top OS/2 executive, was allowed to deliver the show's fusal keynote speech.

IBM eventually bowed out of the show In an interview with Computerworld ICW, Aug. 211. Cameron Myhrvold, director of marketing at Microsoft's Devel-

oper Division, vebemently densed these charges Then last week in a follow-up report by the New York Times News Service, Myhrvold reported that he did in fact ask Softhank Exposition and Conference Co., the show's or ganizer, to cancet Reiswag's appearance. Myhrvold also saud that just days later he changed his mind and decided that Reiswig could speak as planned.

Commenting on the report, Kirs Sorenson, a spokesner son for Microsoft's Developer Division, said. 'It's an amazingly complex lasue, and right now we are not going to refute the Times article." - Lisa Picarille

Microsoft Corp. wasn't the only vendor with news surrounding the Windows 95 launch last week Pirated copies of Windows 90 have already turned up in the

Netherlands and Hong Kong. Also circulating in the land of tulips are counterfeit copies, according to a Microsoft official French newspapers reported the existence of some 50,000 pires

ed copies, a number Microsoft said sounded high. In April, illegal coples of an English beta regarden of Windows 95 were being sold in Moscow's Radso Rynok, an open air consumer goods Dea market. Microsoft held a meeting with

the Business Software Alliance an tipiracy group last Monday to devise a strategy for tackling this

Novell, Inc. announced NetWare Client 32 for Windows 96, client software that will let years nonning Windows 95 access NetWare servers and use Novell's NetWare Directory Services (NDS). The new software will be offered free as part of a pro

The 32-bit client software will feeture NetWare Application Lanncher, a utility that util let network managers create application objects in NDS trees. This is said to speed add tration and simplify user

Pirates, products trail Win 95

access to networked applications The leading PC software vene showed their Windows 95 logs ant applications not tents at the circus-like launch.

Among the largest software yes dors showing 32-bit products was Adobe Systems, Inc. AntoDeak Inc. demonstrated the benefits of 32-bit Windows 95 technology in its AutoCAD Release 13, including and ease of use in comi

ed drafting designs. In the communications suite

ontegory, Delrine was showing CommSuite 96, three communica Pro 7.0, Cyberjack 7.0 for Inter-set scees and WinComm. Pro 7.0, Perhaps the Sessure was the committee telephony integration is WinFax 7.0, which ep-

ables neers to manage voice message, faxos e-mail and paper messages in the 59-hit version

IBM, one of the very last belo against signing a Windows \$5 licease agreement. Smally caved in last week. IBM said it will bundle copies of Win 96 on its PCs, but not for another three weeks or so. install the software on its PCs. Compiled by CW stat

Cobol programmers get help shifting to object orientation

get started, there's a barrier to inging into object-oriented systems. The existing applications on which your business demends are not object original

d, and neither are most, if BRY, of your programmers. Nine times out of 10 those programs are Cobol there's an estimated 80 bil-

lied lines of Cobol still in nor today - and Cobolis an anathema to those in the know on object-oriented de velopment. The Cobol programmer is trained to break a program into procedure and data divisions, while the object cognoscenti say the whole purpose of an objoet is to combine data with ods, or procedures.

So it's common to bear at ums that many of the world's 600,000 Cobol programmers can't make the transition to object-oriented develop ment. These pronouncements stem from of confusivity and high priesthood on the part of the speakers. How er, Raymond Obin, a developer at Micro Focus Ltd. in England, convincingly

ented concepts can't be captured in languages such as Cobol as well as Smalltalk or Car

In his book, Object Orientation, An traduction for Cobal Programmers. Ohm illustrates that many

object-oriented concepts ona be expressed in Cobol 85 without say modifications And be explains object Cobo in terms familiar to today's Cobol programmers. Both Micro Focus and IBM

have versions of object-ori Altro, Calif., at (Boo) ented Cobol. IBM's is still in 553-5269. Object Co beta testing, but Micro Focus' has been available for OS/2 and Microsoft's Windows NT for more than a year. These products offer a direct bridge between lega

cy systems and luture object systems, and many Cobol amers can belp span the ma Of the two, IBM's object Cobol offers

the leanest version over Cobot 85, with about nine object-oriented extensions. according to Carrie Woerzee, manager of rketinget IBM a Santa Therena Lab in San Jose, Calif. No date has been ap-

sced yet for general availability Micro Focus offers a more extensive version in Visual Object Cobol, which runs on Windows NT and will be available in a Windows 35 version by Oct. 1

Both Micro Focus and IBM's object Cobol are dynamic bind languages. This means changes car be made to the common code, and they will be automatically com-

piled into the produc tion system in its next Micro Focus' Visual Object Cobol sup

ports single inher lance as does the IBM's object Cobel supports both single

and multiple inheritance like C++ Woerner says, Micro Focus developmen spokesman Keith Howard says Micro Pocut will consider supporting multiple in

beritance in the future While Micro Pocus' version supports integration of Visual Basic custom con trois and OLE objects, IBM's Cobol will set System Object Model (SOM) bindings for direct-to-SOM implementations. "Wi try to hide the SOM technology from the

programmer," Woerner says. SOM is IRM's language-neutral model for ban dling messages between objects written in different languages and those running on different platforms

Beyond the technical features of both systems, however, are more practica. considerations. Cobol is not isolated as an object language. Object Cobol pro grams can inherit from an existing C++

class. Or existing procedural Cobol transaction progreens and detaba can be recest as ob jects in a Cobol object

system The much-criti rized CoboLeonM continue to serve as a readable bourses language in an objectdominated future

question of how many Cobol programmers will make the tran sition and adopt the mind-set needed to program in object Cobol

'In our experience, 30% to 40% don't make the shift " says Patricio Gill the new head of Hewlett-Packard's Object Oriented Solution Center in Palo Alto. Calif. But that means as many as 60% to 70% have the potential to complete the

With the emerging object Cobols, these programmers represent a resource that will move legacy systems forward.

Babeock is Computerworld's technical editor His taternet address is charles babcock

Inside Lines

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Charles Babcock

w Cobel pro



AFTER HURRICANE ANDREW, THE PRESIDENT SENT IN THE TROOPS. WE SENT PETER NASCA.

The customer's old headquarters lay in ruins. Their new building was still under construction. And the roads were jammed with everything from refugees to roofers' trucks

That was the situation facing PeopleSoft's Peter Nasca and his software implementation team when they landed in Florida on a stormy August morning, just days after Hurricane Andrew. Our customer, ProSource, was spinning off from its parent company, and needed to be up and running with PeopleSoft by December 31. Come hell or high water.

Despite the rubble, despite spotty electric service, despite traffic choked highways, Peter and his team successfully implemented the software. He even flew back to Miami on Christmas Day to ensure the system would be up and running, smoothly and on time. The result: another satisfied customer for PeopleSoft.

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Windows 95

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